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CHARACTERIZATION OF VARIOUS FORMS OF ENDOCARDITIS*

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According to the studies that we have made, cases of endocarditis can for the present be best classed as rheumatic, syphilitic, acute bacterial, subacute bacterial, and indeterminate.

The cause of rheumatic fever has not yet been discovered. There exists, however, a lesion specific for the disease, the Aschoff body. It is to be remembered that this is a perivascular lesion, in contradistinction to the lesion later to be noted as occurring in cases of subacute bacterial endocarditis. In rheumatic fever, a secondary infection by anhemolytic streptococci was found by Kinsella and Swift in 8.3 per cent. of the cases studied by them. At the postmortem examinations, cultures yielded the organisms in 50 per cent. of the cases. They found no immunologic reactions present for these cocci, whereas in cases of subacute streptococcus endocarditis they observed, as we did, that a complement fixation test is uniformly present when the serum of the patient is tested against the homologous organism. Rheumatic fever may occur in acute, subacute or recurrent form. It is the most frequent cause of valvular defects.

Syphilitic disease of the valves of the heart is known to us practically only as an end-product. It is very likely that it occurs in at least acute and recurrent forms. It is important to make studies in this direction.

BACTERIAL GROUPS

The groups called bacterial are so designated because they are due to known bacteria. When the cause of rheumatic fever is discovered, a better nomenclature can be introduced. The cases of bacterial endocarditis that run an acute course are due most commonly to hemolytic streptococci, pneumococci, staphylococci and the gonococcus, but can also be caused by a great variety of other organisms. The acute bacterial endocarditides occur much less frequently than infections running a subacute course. Cases lasting for six weeks are usually classed as subacute. The acute cases were formerly called "acute malignant endocarditis." The subacute cases are due in about 95 per cent. of the cases to anhemolytic streptococci (the so-called *Streptococcus viridans*). The remaining cases are nearly all caused by the so-called *Bacillus influenzae*.

Other organisms, especially the gonococcus, can cause an infection giving a subacute picture, while on the other hand, the organisms found in the subacute cases may, rarely, originate an infection of short duration. These subacute cases have been designated by a variety of names, the most frequently employed being chronic septic endocarditis, septic rheumatic endocarditis, chronic infectious endocarditis, chronic malignant endocarditis and endocarditis lenta. It is best to designate the bacterial cases according to the course of the disease and the infecting organism. As the subacute cases are almost entirely due to anhemolytic streptococci and the influenza bacillus, they are best designated as subacute anhemolytic streptococcus endocarditis or subacute *Bacillus influenzae* endocarditis. For brevity, one can call the streptococcus cases subacute streptococcus endocarditis, because we know that the hemolytic streptococci practically never are the cause of a case of endocarditis of subacute type. I myself have seen no such cases.

THE INDETERMINATE GROUP

What we designate as the indeterminate group consists essentially of two types of cases: (1) an atypical form of verrucous endocarditis, and (2) those cases usually described as terminal.

To explain what we mean by the atypical variety, it is necessary to revert to the subject of rheumatic fever. We have stated that the Aschoff body is the characteristic lesion of this disease, and, for scientific purposes, only those cases in which this lesion is found can definitely be designated as rheumatic. In our studies of hearts from cases clinically recognized as cases of rheumatic fever, and exhibiting at postmortem examination the typical verrucous lesions, only eighteen out of fifty-six cases exhibited Aschoff bodies. A study of the clinical histories of the other thirty-eight cases makes it clear that many of them at least are cases of true rheumatic fever. It is evident, therefore, that not all cases of rheumatic fever are accompanied by the specific lesion. At the same time, we cannot state that all of the cases not showing the bodies are cases of rheumatic fever. Possibly, some belong in the indeterminate group which I shall now discuss.

Besides those cases that present the clinical picture of rheumatic fever and the typical verrucae on the valves, but not Aschoff bodies, there exists a group of cases presenting more or less the clinical picture of rheumatic fever (with perhaps a greater tendency to the occurrence of purpura and erythema), not showing Aschoff bodies at the postmortem examination, and accompanied by lesions on the valves which do not correspond to those usually found in rheumatic fever. The lesions are much larger and flatter, and have a tendency to extend for a fair distance along the surface of the

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valves. They may show a somewhat crinkled appearance, and in one case, the lesion extended from the mitral valve for a considerable distance over the mural endocardium of the left ventricle. The mural endocardium may be involved at a distance far away from the valves. Bacteria have thus far not been found in the vegetations of this group. It is possible that some of them represent unusual types of vegetations of rheumatic origin.[1] There are no so-called Bracht-Waechter bodies in the myocardium in these cases.

The other type of what we for the present designate as the indeterminate group of cases is represented by what has usually been described as terminal endocarditis. This is a form of endocarditis that occurs without recognized symptoms at the end of a chronic and debilitating disease. It has been found most frequently in such conditions as diabetes, gout, nephritis, neoplasms, old lesions of the nervous system, and exophthalmic goiter. We have been surprised by the frequency of its occurrence in cases of leukemia, acute or chronic. The lesions are small verrucae, and in the heart muscle and kidneys there are no known characteristic changes. These cases need renewed investigation. It may very well be found that some, at least, of these endocarditides are instances of a terminating and not of a terminal disease. I drew attention to the importance of this distinction, a number of years ago. It has been thought by some that the lesions in these cases may be toxic in origin. It is just as likely, or more likely, that they are definite infections. In cases of chronic valvular disease of rheumatic origin, such an endocarditis may be found. The question then arises whether or not we are possibly dealing with a terminal endocarditis of rheumatic origin, without the presence of Aschoff bodies. The fact that symptoms are not present does not constitute an argument against a possible rheumatic origin of the lesion, because we have seen cases of acute rheumatic endocarditis occur in the absence of all recognizable clinical symptoms. In cases of subacute bacterial endocarditis in the bacteria-free stage (which I shall shortly define), a so-called terminal endocarditis has been found by us. Recently we have found that a true rheumatic endocarditis may occur as a terminal infection in the course of other diseases.

Little is known as regards the inflammatory changes in the valves in cases of exanthematous and other specific fevers, except, of course, the occurrence of acute bacterial endocarditis. In patients who had suffered some time before from scarlet fever, we have found an undescribed lesion of the mitral valve. This I shall discuss at another time. Tuberculosis of the endocardium is a very rare disease. Atherosclerosis is not an inflammatory process, but it plays a great rôle in the production of valvular defects. Its importance in causing disease of the mitral valve has not been sufficiently understood. Besides typical atherosclerosis there are a number of other causes of noninfectious thickenings of the valvular and mural endocardium.

PATHOLOGIC AND CLINICAL CHARACTERISTICS

It will now be of value to take up briefly some of the pathologic and clinical characteristics of these varieties of endocarditis. It will be possible to discuss only some of them. The syphilitic and indeterminate cases will be only casually brought in for discussion, because our knowledge of them is in a great many respects, very deficient.

The first question that arises is in regard to the significance of the presence of a previous valvular disease. Valvular defects are caused by rheumatic fever, atherosclerosis, syphilis, congenital disease, traumatism, and rarely by a bacterial endocarditis that has ended in recovery from the infection. Rheumatic fever and syphilis readily attack healthy valves. Acute bacterial endocarditis usually attacks a valve that is the seat of a previously existing valvular defect. Subacute bacterial endocarditis occurs almost always on the basis of a previously damaged valve. It involves most frequently valves previously affected by rheumatic fever, less often syphilitic valves, and, still less often, valves affected by atherosclerosis. Acute bacterial endocarditis is not at all an infrequent occurrence in connection with all kinds of congenital cardiac defects. The congenital lesion that we have most often found involved in cases of subacute endocarditis is the open ductus arteriosus. This may very well be so because this is the congenital lesion most often found in adult life. The indeterminate cases of endocarditis may occur in the entire absence of previous valvular disease.

The portals of infection in syphilis are well known. In rheumatic fever, knowledge in this respect is lacking. The tonsils appear in some instances to be the seat of the virus, but it has not been proved that they represent the only or the main portal of entry. The origin of acute bacterial endocarditis is usually found in an evident purulent focus. In the subacute cases, the invasion usually originates in what, following Billings and Rosenow, we call focal infections. It is possible that the disease may be initiated by organisms in the intestinal tract.

A study of the extensive material at our disposal (made with the valuable assistance of Dr. Benjamin Sacks) shows that in fatal proved cases of rheumatic fever the tricuspid valve was involved in twelve of eighteen cases, or more than 66 per cent. Taking all the cases classed clinically as rheumatic and showing typical vegetations at the postmortem examination, but without Aschoff bodies, we find fifty-six cases, thirty-one of which, or 55 per cent., were accompanied by vegetations on the tricuspid valves. This was not surprising, because I had for many years drawn attention to the high incidence of more or less marked stenoses and organic insufficiencies of that valve. Syphilis, as is well known, has an affinity for the aortic valve. Nothing definite is known as to the involvement of the mitral valve. In cases of acute bacterial endocarditis, the right side of the heart (tricuspid or pulmonary valves, or both) was found involved in fifteen out of fifty-six cases, or 26.8 per cent. The mitral valve was affected more often than the aortic, the same holding true of cases of subacute bacterial endocarditis. In cases of the latter disease, the right side of the heart was involved once (tricuspid) in more than 100 hearts, and the lesion was slight. The atypical cases involve the right side of the heart frequently, in one instance the pulmonary valve being affected. This valve was not found affected in any definitely proved case of rheumatic fever. Terminal endocarditis appears to be a disease of the left side of the heart, the mitral valve being the usual seat of the disease.

As regards the type of gross lesion found, in rheumatic endocarditis it is a small verrucous lesion which undergoes scarring and leads to stenoses and insufficiencies. In acute bacterial endocarditis, one finds

1. In one case studied within the last year, an opportunity was afforded to follow the entire clinical course. The clinical picture was different from that of rheumatic fever and of subacute bacterial endocarditis.

fibrinous deposits, ulceration, and abscesses of, and perforations through, the walls. In subacute cases the lesion may be small or massive, but even when small is practically always larger than the lesion found in cases of rheumatic fever. There is little tendency to ulceration; and, if ulceration does occur, it is usually in the aortic flaps. The disease occurs much more frequently on the mitral than on the aortic valve. There is then frequent involvement of the wall of the auricle and of the chordae tendineae. Healing often occurs, with resulting fibrous tissue, with or without calcareous impregnation. In the cases of terminal endocarditis, the lesion consists of verrucae usually quite small.

MICROSCOPIC APPEARANCE

The statements made here concerning the microscopic appearance of the various types of lesions are based on studies made by Dr. George Baehr, who will later report on them in full. In rheumatic endocarditis, the verrucae in a given attack all appear to be of the same age. The first change is a productive inflammation over which the endothelial cells swell and desquamate. The denuded areas are covered by agglutinated blood platelets. The adjacent endothelium rapidly proliferates, covering the surface of the blood platelet nodule and thus limiting its size. This is the typical verruca. Later, the nodule becomes organized and thereby flattened, and a ridgelike scar is found along the closure line. In the atypical cases of the indeterminate group and in the terminal cases, the lesion is essentially the same as it is in the rheumatic cases. What differences do exist will be described at a later time. In acute bacterial endocarditis, we find a purulent infiltration over a very much wider area, with resulting necrosis and ulceration. A large blood platelet mass results, the so-called vegetation. It is invaded by polymorphonuclear leukocytes and by such large numbers of organisms that there is a veritable row of colonies on the surface. Endothelium does not cover the mass. Organization occurs in the deep layers of the vegetations in patients who do not die within the first few weeks. In cases of subacute streptococcus and *Bacillus influenzae* endocarditis, the primary lesion, though small, is larger than it is in rheumatic fever. There is no purulent inflammation, but a productive process with a tendency to round cell infiltration. The process spreads by continuity. The blood platelet mass that is formed is invaded by such large numbers of bacteria as to form definite rows of colonies, especially near the surface of the mass. The vegetations contain few polymorphonuclear leukocytes. In a number of cases, giant cells are found, apparently of the foreign body type. When present, they constitute a characteristic lesion of this type of endocarditis. Phagocytic cocci are often demonstrable in them. The freshly formed portions of the vegetations consist almost entirely of bacteria. The endothelium of the adjacent endocardium is inhibited to a great extent from spreading over the surface of the mass because of the presence of the colonies of bacteria. In the deeper and older portions, the bacteria tend to disappear, and here an active fibroblastic invasion is always to be seen; and, when healing occurs, dense connective tissue with and without lime has formed.

Whatever lesions are found in the heart muscle in cases of acute bacterial endocarditis consist in the main of polymorphonuclear leukocytes. In cases of subacute bacterial endocarditis, one finds an essentially round cell interstitial lesion, the so-called Bracht-Waechter body. These lesions are not present in all cases, and are not specific. In rheumatic fever, as stated above, Aschoff bodies may be present. In syphilis, as is well known, syphilitic lesions of smaller or larger extent may occur in the myocardium.

OTHER FINDINGS

Pericarditis of various types, including the purulent type, occurs in the cases of acute bacterial endocarditis. In rheumatic fever, pericarditis is very frequent, a purulent effusion never being found. It is also found in atypical verrucous endocarditis of the indeterminate group. We have observed one case in which there was a recent pericarditis accompanied by Aschoff bodies in the heart muscle, but not by any lesions of the valves. In subacute endocarditis, pericarditis is not part of the clinical picture. It might very well occur as the result of the presence of pneumonia or some other complication, or it might represent a mixed infection with rheumatic fever.

Embolic lesions occur with great frequency in the acute and subacute bacterial cases. They consist of petechiae, Janeway lesions, Osler (tender cutaneous) nodes, gross embolisms in the vessels, embolic aneurysms and purpura. The last named condition, as well as petechiae, particularly white-centered ones, can, of course, occur without being embolic in nature. Embolic lesions in cases of rheumatic fever or valvular disease are due to secondary thromboses and not to the valve lesion as such. Such emboli never produce tender nodes or embolic aneurysms. The Osler node occurs only in the subacute cases. Subcutaneous fibroid nodules are found only in the rheumatic cases. The Janeway lesions occur almost exclusively in the cases of acute bacterial endocarditis.[2] In connection with subacute bacterial endocarditis, I have seen them only three times, and in all these three instances they were quite small. In these cases there were associated small oval areas of erythema scattered over a smaller or larger part of the surface of the skin of the body—a type of eruption that we have never seen in cases of acute bacterial endocarditis. Typical erythema nodosum is not found in cases of acute or subacute bacterial endocarditis, but can occur in cases of definite rheumatic fever. Erythema multiforme in its typical form occurs only in the rheumatic cases and in the atypical cases of the indeterminate group. Atypical erythematous lesions are seen in cases of acute and subacute bacterial endocarditis. Petechiae occur frequently in cases of acute and subacute bacterial endocarditis. When they occur in rheumatic fever, it is only as part of a purpuric eruption. Petechiae having white centers occur in the acute and subacute cases, but more often in the latter. Those with elevated white centers are found only in the acute cases, and then usually indicate a general staphylococcus infection.[3]

Purpura occurs in cases of rheumatic fever and in the atypical cases of endocarditis, but is then not due to embolism. In cases of acute and subacute bacterial endocarditis, the purpura that occurs may be either embolic or not embolic in origin.

In the eyes we find lesions in both the rheumatic and the bacterial cases. The uveal tract may be involved in cases of acute bacterial endocarditis. The lesion is

2. These lesions were described many years ago by Edward G. Janeway as "small hemorrhages in the palms and soles with slightly nodular character." In contradistinction to the Osler nodes, these lesions are not tender. The lesions are of such great value for diagnosis that we have thought it proper that they should have a special designation, and that this designation should carry the name of the eminent clinician who emphasized the importance of them for diagnostic purposes. We have found that some of these lesions may be rather erythematous in character.

3. Petechiae with elevated white centers or elevated petechiae may occur in general infections which are not accompanied by an endocarditis. They occur most frequently in cases of staphylococcemia.

usually a severe one, often terminating in panophthalmitis. In the subacute bacterial cases, no such lesions have been found by us. In fact, we have not seen any cases in which the uveal tract was involved in even a mild way in cases of the subacute type. This is rather remarkable because the same focal infections that cause endocarditis are known not infrequently to produce disease of the iris, ciliary body and choroid coat of the eye. In one case the patient suffered from a choroiditis due to ethmoiditis, and soon afterward developed a subacute streptococcus endocarditis, apparently of tonsillar origin. The choroiditis did not recur. In rheumatic fever, uveal involvement occurs, but such a complication is very unusual. The literature on this subject is quite misleading. Apparently, cases of disease of the uveal tract due to the bacteria present in focal infections have been wrongly classed as rheumatic. Optic neuritis occurs in the various types of bacterial endocarditis. It is much more frequent in cases of subacute streptococcus endocarditis than has usually been realized. Optic atrophy may result. Besides hemorrhages in the retina, certain white spots, which were first described by von Roth and which are often termed Roth's spots, are found. They seem to occur much more frequently in the acute than in the subacute type of cases.

In cases of rheumatic fever, acute bacterial endocarditis and atypical verrucous endocarditis, the skin over the joints may be red. In the subacute cases one practically never sees this condition. When it occurs, one must think of the possibility of a mixed infection with rheumatic fever being present. Pus is found in the joints only in cases of acute bacterial endocarditis.

The study of the kidneys has given most interesting results. In acute bacterial endocarditis, besides infarcts, one may find purulent lesions. In the cases of rheumatic fever in which Aschoff bodies were present, there were not found any instances of diffuse glomerular nephritis. In the cases classified as rheumatic and in which Aschoff bodies were not found, glomerular nephritis was found three times. In subacute streptococcus endocarditis, besides infarcts, there occurred the embolic glomerular lesions which were first described by Löhlein and fully studied by Baehr. These lesions occur in no other form of endocarditis, and very rarely in other conditions.[4] The embolic lesions occurred in all but two of sixty-eight cases studied by Dr. Baehr. They were found to be less abundantly present in cases in the bacteria-free stage. Diffuse glomerular nephritis occurs more than fifteen times as frequently in the bacteria-free stage of subacute streptococcus endocarditis as in the bacterial stage. When found in the bacterial stage it is acute in type, whereas in the cases in the bacteria-free stage, it presents the appearance of a subacute or chronic diffuse glomerular nephritis. In one case of rheumatic fever (Aschoff bodies present), necroses were found in the renal cortex and also in the heart muscle, which were due to a proliferative lesion in the endothelium of the arteries. A study on this subject will be reported later by Drs. Baehr and Sacks. In the cases of subacute bacterial endocarditis due to the influenza bacillus (seven cases), we have thus far found no embolic glomerular lesions. We do not yet know whether this observation has any significance. The Osler nodes were found in some of these cases. Diffuse glomerular nephritis was found in one case in the bacterial stage.

4. We have found them in one case of actinomycosis, and in a case the exact nature of which was never cleared up, and which at the postmortem examination presented an adherent pericardium and focal necroses in the liver.

CONDITIONS IN WHICH ANHEMOLYTIC STREPTOCOCCI HAVE BEEN FOUND

It is important to remember that anhemolytic streptococci may be found in the blood of patients suffering from conditions other than endocarditis. Otherwise, one would make the error of concluding, from a report that such streptococci had been found in the blood of a patient, that an endocarditis was present. They have been found in:

1. Cases of subacute streptococcus endocarditis.

2. Cases of rheumatic fever and of chorea. As stated earlier in this communication, under these conditions they are believed to be secondary invaders. The cocci found in such cases differ in certain morphologic and cultural characteristics from those found in cases of subacute bacterial endocarditis.

3. Cases of combined rheumatic endocarditis and subacute streptococcus endocarditis, their presence being due to the second named condition. I shall at another time describe such a case.

4. As an invasion from active or quiescent focal infections, especially the tonsils.

5. As an invasion from acute inflammatory processes in various parts of the body, as, for instance, thrombosis of the lateral sinus, postpartum infections, and phlegmons.

6. As a secondary or terminal invader in a variety of diseases. In cases of verrucous endocarditis of the rheumatic or terminal type, Reye recovered anhemolyic streptococci regularly from the crushed vegetations. In sections they were found only with great difficulty.

7. Fatal cases of valvular defect or subacute *Bacillus influenzae* endocarditis, as a secondary infection.

8. A curious group of cases,[5] described by Oille, Graham and Dettweiler, characterized by subfebrile temperature elevations and the presence of anhemolytic streptococci in the blood. The patients, of whom there were twenty-three, all recovered. Because embolic features were not present and because there was otherwise no absolute evidence of organic change in any of the valves, one cannot be sure that the endocardium was involved. Nevertheless, one must admit that in at least some of these cases an infection of the endocardium took place. Herrick and Warren reported a small group of cases in which there occurred a general infection by an hemolytic streptococci, with recovery. Some of these were found in the course of a valvular defect. Here also one cannot be sure whether or how often the valves were involved.

MIXED TYPES

Mixed types of valvular affections and mixed infections of various kinds come under observation. The combination of valvular disease and endocarditis have been mentioned. Some of these are:

1. Atherosclerosis and syphilis, either being the primary lesion. The combination of valvular disease and bacterial endocarditis is common knowledge. Atherosclerosis and atherosclerotic processes are ofen added to valvular disease of rheumatic origin. How often the rheumatic virus attacks a valve that has previously been the seat of atherosclerosis, we do not know.

2. Rheumatic fever and subacute streptococcus endocarditis. We observed one case in which the bacteriologic and pathologic studies proved definitely that the two diseases were present at the same time, the lesion of rheumatic endocarditis being present near the free border of the mitral valve, and the lesion of the subacute streptococcus endocarditis, much larger in size, being present on the ventricular aspect of the aortic flap of the mitral valve. In a second case there were found the healing lesions of subacute endocarditis of the valves and fresh Aschoff bodies in the heart muscle.

3. Valvular defect and verrucous (terminal) endocarditis.

5. A group of eighteen similar cases has recently been reported, mainly from the bacteriologic side, by Salus.

4. In cases of subacute streptococcus endocarditis, secondary infections by pneumococci are occasionally found, the latter being then generally due to the presence of a pneumonia. In endocarditis in the bacteria-free stage, a secondary infection by an anhemolytic streptococcus has been found once in a case of healing *Bacillus influenzae* endocarditis, and in another case of healing streptococcus endocarditis there were some superficial lesions due to a secondary infection by *Staphylococcus aureus*. In the latter case there were present purulent foci in the heart muscle, in which staphylococci were demonstrated in sections.

COURSE

It will now be of interest to discuss, even if briefly, the course of the various types of endocarditis. The outcome of the syphilitic cases in the form of aortic insufficiency is known to us, but little has been learned concerning the history of the active stage of the infection. The general course of rheumatic endocarditis has been much but not sufficiently well studied. It is necessary to carry on renewed investigation concerning the life history of the disease and of the lesions. It is of interest to note that death may occur in the first attack of rheumatic endocarditis. We have definite pathologic evidence on this point.

In the last twelve years we have learned much that is new concerning the course and outcome of cases of subacute bacterial endocarditis. In the discussion of this subject it is necessary to distinguish cases in the bacterial and the bacteria-free stages. The case is surely in the bacterial stage if the blood culture is positive; but it may be in the bacterial stage, and yet the blood culture may be repeatedly found negative. This can be determined by clinical criteria, but more definitely by the postmortem examination. In cases in the active stage of subacute bacterial endocarditis, the surface of the vegetations consists almost entirely of bacteria. If the organisms are present in small numbers, the case is already going over to the bacteria-free stage. With these facts in mind, we can discuss the cases as they present themselves to us clinically.

CLINICAL OBSERVATIONS

1. *Cases Giving a Positive Blood Culture.*—More than 90 per cent. of cases in the active stage are found to have bacteria in the blood if proper methods are used. What happens to these patients? Nearly all of them die. When I had completed the study of the first 150 cases I had observed four cases of complete recovery. In these cases there was no proof that the particular method of therapy employed was responsible for the favorable outcome. Since that time I have observed at least two more such cases. The first four patients came under observation, respectively, nine, seven, five and five years ago. The fifth patient was observed during the greater part of the year 1921, and has been free from the infection since January of this year. The sixth patient that recovered has been under observation for several months since the time of recovery. To be sure that a patient has really had the disease, one needs more, as I stated above, than to find that there is present valvular disease and that there are bacteria in the blood. There must be definite clinical symptoms present, such as fever, splenic enlargement, petechiae, tender nodes, embolisms and progressive anemia. There exist cases in which a positive blood culture is found followed by negative blood cultures. These patients usually die within a few months. After the blood is free from bacteria, the patients generally present symptoms like those occurring in the cases to be described directly, that come under observation for the first time in the so-called bacteria-free stage.

2. *Cases Coming Under Observation with Negative Blood Cultures.*—A. Some of these cases are in the active stage. Clinically they act like the cases in which the blood cultures are positive, and the necropsy shows vegetations full of bacteria. These cases really belong in Group 1, constituting cases of that type in which we failed to find the bacteria during life.

B. This group has the same symptoms as cases in the active stage, but they gradually lose the fever and most of the other symptoms. Most of these patients die while still in the febrile stage. At the necropsy, few or no bacteria are found in the vegetations. They are evidently cases that were recently in the bacterial stage of the disease. Those patients that live after the fever has disappeared present a clinical picture like that presented by patients constituting the next group.

C. Here we find a remarkable group of cases in which fever is not a characteristic symptom as it is in the active stage of the disease. Some of these patients have no elevation of temperature during a long period of observation, which may extend over many months. Fever may occur because of complications, anemia or intercurrent diseases. The type of cases belonging to this group, which comes under observation still febrile, with negative blood cultures, and then becomes afebrile, has been described in Group B.

In papers published in 1912 and 1913 and in subsequent communications, I have directed attention to a group of patients who come under observation with a valvular defect and with a variety of symptoms such as embolisms of the various types mentioned above, progressive anemia, splenomegaly, progressive insufficiency of the kidney due to subacute or chronic glomerular nephritis, or a peculiar pigmentation of the face. These cases had generally been considered to be instances of chronic rheumatic endocarditis. From pathologic, bacteriologic and clinical studies, it was definitely shown that such patients must have had a previous endocarditis of the bacterial type, and had not come under observation in the bacterial stage, or had not been recognized as suffering from such a condition. Such cases are designated as cases of subacute bacterial endocarditis that have become spontaneously bacteria-free. The lesions in the heart were of the same type as were found in the cases in which positive blood cultures had been obtained, but showed marked or complete organization with or without calcification. In nearly all the cases the typical embolic glomerular lesions were found, but in a healed stage. They were much less abundantly present than in the cases that showed evidence of active infection. In the few cases in which the embolic glomerular lesions were not found, the patient had presented typical Osler nodes during life, and the cases could therefore be accurately identified.

It is interesting to speculate on the probable great frequency of subacute bacterial infections of the valves of the heart with complete recovery in cases in which there is no history of the active infection. I have shown that cases with positive blood cultures may undergo complete recovery, and have drawn attention to the occurrence of cases coming to us with sequelae of the disease in which there is no history of the active bacterial stage of the disease (we have seen at least fifty such cases). It is therefore most probable that there occur cases in which the infectious stage was never recognized clinically, and in which a complete recovery

ensued, leaving no evidence behind of a type that we have heretofore recognized.

3. *Recurrences.*—During the last year we have made the novel observation that recurrences of the disease exist. Thus far four such cases have come under observation:

A. A case in the bacteria-free stage with fresh lesions due to anhemolytic streptococci. There were very recent and also completely healed embolic glomerular lesions.

B. A case with positive blood cultures; then a baceria-free stage with the development of renal insufficiency, and later a return of the fever and bacteremia, and a fatal outcome.

C. A case with positive blood culture in which there was fever for several months; then a completely afebrile period lasting six months, and a second attack of fever lasting three weeks with a general infection of anhemolytic streptococcus. In the first attack, petechiae were present and the spleen was enlarged. In the second attack, splenic enlargement was present. This patient is being kept under observation.

D. A case apparently at the end of the active stage of the disease, with fever, white-centered petechiae, enlarged spleen, tender sternum and marked anemia, running a course of a number of weeks, with negative blood cultures. All the symptoms then disappeared, and after ten months the fever returned for three weeks and white-centered petechiae were repeatedly found, and anemia developed under observation. This patient now has no fever and is being further studied.

All of these cases could be used as evidence that recurrences of the infection may take place. Further studies in this direction are highly desirable because it is very probable that recurrences of the disease are much more frequent than we had believed possible. The occurrence of mild forms of the disease points in this direction. Reference has been made to the cases described by Oille, Graham and Dettweiler. I am not yet in a position to state how often such mild cases occur, but the studies of the last few years have made me believe that I may have overlooked a number of them.

CONCLUSION

It is evident that I have presented the subject of the characterization of the various forms of endocarditis in a very broad way only. It is realized that the various subjects that have been discussed must later be taken up in a more detailed fashion.[6] One thing is clear. It is evident that the disease which was considered rare, subacute bacterial endocarditis, is now recognized as one of the common diseases. Of great interest is the change in our point of view. It was supposed to be a practically uniformly fatal disease. Now we are observing more and more partial or complete recoveries. We find that very mild cases exist, and that there is a recurrent form of the disease. In other words, the interest is shifted toward the question of healing. It will be of the greatest value if an active campaign is undertaken for the purpose of preventing this as well as other forms of endocarditis.

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6. References to the older literature will be found in earlier papers. The later literature will be given in subsequent publications.

Empiricism and Rationalism in Therapy.—Empiricism may be defined as the employment of a remedy of whose actions we are ignorant for a disease whose nature we do not understand. Rational or scientific treatment means, on the other hand, the recognition of the symptoms of ill health, with a knowledge of their mechanism and prognostic significance, and the employment of a remedy whose action on the sick human body we know and understand.—Sir James Mackenzie, *Brit. J. Tuberc.* **17**:15 (Jan.) 1923.

STUDIES IN FAMILIAL NEUROSYPHILIS

II. FAMILIAL NEUROSYPHILIS FROM VARIOUS EXTRAFAMILIAL SOURCES: A CLINICAL CONTRIBUTION TO THE QUESTION OF NEUROTROPISM *

JOSEPH EARLE MOORE, M.D.
AND
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In the first paper of this series,[1] we reviewed the question of conjugal neurosyphilis, and reported examinations of the fifty-two marital partners of fifty neurosyphilitic patients. The results were discussed from the standpoint of their applicability to the hypothetic existence of a strain of *Spirochaeta pallida* having a selective affinity for the central nervous system. Conjugal neurosyphilis was observed in twenty-one, or 52.5 per cent., of the forty partners in whom syphilis could be demonstrated, this incidence being much greater in the partners of paretics and tabetics than in those of cerebrospinal (meningovascular) neurosyphilitics. This variation, together with other facts, led us to conclude that from this type of clinical study alone a definite decision as to duality of strain could not as yet be reached.

To the proponents of neurotropism, the high incidence of conjugal neurosyphilis, both partners having been infected with the same strain of organism, as well as the occasional development of neurosyphilis in several persons infected from a common source, provides a substantial clinical basis for the hypothesis. That a neurotropic strain of organism cannot be the only factor, or necessarily the most important one, in the origin of neurosyphilis is illustrated by the families to be reported in this paper, since several members, each acquiring syphilis from a separate source, all developed neurosyphilis.

REPORT OF CASES

FAMILY 1.—*Elder brother infected with syphilis in 1914 at 29; lapsing treatment; in 1917, asymptomatic neurosyphilis; "cure" by adequate treatment; remains well in 1923. Younger brother contracted syphilis in 1910, at 20; in 1920, general paresis.*

The elder brother, aged 29, was seen in January, 1914, with primary and secondary syphilis of eight weeks' duration. There was a fairly profuse maculopapular rash, polyadenitis and the scar of the healed chancre. During 1914 and 1915, he received only three doses of arsphenamin. About four months after the onset of the infection, he began to suffer with severe headache, lasting continuously for periods of a week or more, a drowsy feeling and burning sensations over the skin. He disappeared from observation until July, 1917, at which time a spinal puncture was performed. This showed 32 cells, globulin + + +, Wassermann reaction positive with 0.2 c.c., and a colloidal gold curve reading 4333321000. The blood Wassermann reaction also was positive. Neurologic examination disclosed nothing of importance.

This patient's younger brother was admitted in July, 1920, at the age of 30. In 1910, when 20 years old, he contracted a chancre which was treated with two injections of arsphenamin, and was not followed by any secondary symptoms. He had remained well until ten days before admission, when

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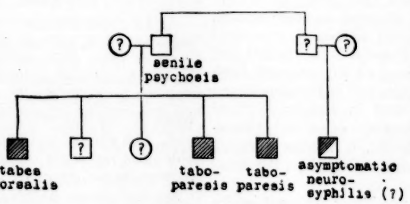
* This clinical research has been aided by funds from the United States Interdepartmental Social Hygiene Board and the American Social Hygiene Association.

1. Moore, J. E., and Keidel, Albert: Studies in Familial Neurosyphilis, I, Conjugal Neurosyphilis, J. A. M. A. **77**:1 (July 2) 1921.

he suddenly fell unconscious. Since then he had been very nervous, trembling and twitching constantly. His wife had noticed that his speech was thick. Examination revealed anisocoria; the pupils reacted sluggishly to direct light, but failed to react consensually; there were coarse tremor of the lips and tongue, markedly exaggerated deep reflexes, speech defect, date discrepancies, euphoria, a belligerent manner, and lack of insight. The blood Wassermann reaction was positive; the spinal fluid showed 112 cells, globulin + + + +, Wassermann reaction positive with 0.1 c.c. of fluid, and paretic colloidal gold and mastic curves. The diagnosis was general paresis.

FAMILY 2.—*Colored. Father, aged 50, contracted syphilis in 1900, two years after birth of youngest son. In 1920, neurosyphilis with partial bilateral eighth nerve deafness. Eldest son, aged 28, infected from a different source in 1915. In 1920, neurosyphilis with probable partial unilateral eighth nerve deafness, positive spinal fluid. Youngest son, aged 20, at admission in 1918, had secondary syphilis. Two and one-half years later, asymptomatic neurosyphilis.*

The father was 50 years old at the time of admission in 1920. At 30, eight years after the birth of his eldest son, and two years after that of the youngest son, he developed a phallic sore, which was hard and painless, and for which he received only local treatment. No recognizable secondaries followed. The entrance of syphilis into the family is well marked by the occurrence of two miscarriages following the last healthy child. Three years before admission (seventeen years after infection) the patient had a severe sore throat lasting several months, and since that time he has been hoarse. For the last three or four years, he has had severe headaches; for two years marked tinnitus in the right ear, and for the past year vertigo, a definite impairment of hearing on the right, a sense of formication on the scalp, and a sense of a constricting band about the head.



Neurosyphilis in Family 3.

Physical examination revealed contracted pupils, which, however, reacted promptly to light and accommodation. There was partial inner ear deafness on both sides, involving both the cochlear and the vestibular branches, and more marked on the right. A large, ragged perforation was present in the soft palate, with scarring and destruction of the right anterior pillar. The lymphatic glandular groups were all easily palpable. There were two scars on the glans penis. The deep reflexes were normally active. The blood Wassermann reaction was negative; the spinal fluid showed 3 cells, a weakly positive globulin test, Wassermann reaction negative with 1 c.c. of fluid, and negative colloidal gold and mastic curves. Nevertheless, the physical evidence permitted the diagnosis of a healed gumma of the soft palate, and partial bilateral eighth nerve paralysis.

The eldest son, aged 28, was born eight years before his father contracted syphilis. About five years before admission in 1920, a sore on the penis developed, which was followed in about six months by a generally distributed non-itching rash, but no other secondary symptoms. Coincidently with the rash, there appeared a "gnawing" sensation in the left ear with increasing deafness on this side, both of which conditions have persisted.

Physical examination disclosed normal pupillary reactions, a probable partial destruction of the cochlear and vestibular branches of the left eighth nerve (otologic examination was unfortunately incomplete), and sluggish deep reflexes. The blood Wassermann reaction was positive; the cerebrospinal fluid showed 270 cells, globulin + +, Wassermann reaction negative with 1 c.c., and a paretic mastic curve. The diagnosis of neurosyphilis with unilateral eighth nerve deafness was permissible.

The youngest son, aged 20, first seen in June, 1918, had had a sore on the penis four months previously, which was not treated. About two months later, he developed lesions about the anus, which caused pain on walking. Examination at this time revealed numerous characteristic papulo-erosive lesions of the buccal mucosa, a marked visible polyadenitis, the inguinal groups being especially large, and numerous typical condylomas about the anus. On the shaft of the penis there were three or four indurated papules of a secondary type, though the rest of the skin was clear. The initial lesion was hidden by phimosis.

During 1918, he received four doses of arsphenamin, 0.3 gm. each, at irregular intervals. The positive blood Wassermann reaction was reduced to negative by the first injection.

A lapse of two years and seven months occurred before the patient's next visit, in March, 1921. At this time physical examination and the blood Wassermann reaction were both negative, and the patient was free from complaints. A spinal puncture performed as a routine disclosed 2 cells, globulin + +, Wassermann reaction negative with 1 c.c., a colloidal gold curve reading 3332°210000, and a colloidal mastic of 3221000000. The diagnosis of asymptomatic neurosyphilis is apparent.

FAMILY 3.—*Father, senile psychosis. Eldest son acquired syphilis in 1892; tabes dorsalis with Charcot hip in 1920. Third son, chancre in 1904; died of taboparesis in 1917. Youngest son, chancre in 1896, taboparesis in 1922. First cousin of these brothers, chancre in 1900, paranoid psychosis in 1912, asymptomatic neurosyphilis (?).*

The father of this remarkable fraternity died at 82 of senility, having had two attacks of a senile delirium before death. He had four sons and a daughter. The second son and the daughter are, as far as is known, well.

The eldest son, seen in 1920, at the age of 53, developed a phallic lesion in 1892, which was diagnosed as a hard chancre by a competent physician, and treated with mercury intermittently for several years. On admission, his complaints dated back fifteen years to 1905, when he began to suffer with sharp shooting pains in the legs, radiating from hip to heel. During the last year these had grown much worse, and for two months had been almost unbearable. Three weeks before admission there was swelling of the right leg below the knee, and the knee became stiff. Prior to this he had noticed no difficulty in walking. Physical examination revealed equal, irregular pupils, reacting sluggishly and slightly to light; absent knee and ankle jerks; diminution of deep reflexes of the left arm; marked ataxia of the lower and slight of the upper extremities; right Charcot hip confirmed by roentgenoscopy, and a dilated aorta. The blood Wassermann reaction was negative; examination of the spinal fluid revealed 12 cells, globulin + +, Wassermann reaction positive with 1 c.c. of fluid, and negative colloidal tests. The diagnosis was tabes dorsalis and Charcot hip.

In 1904, the third son, when 33 years old, contracted a chancre, which was followed in six weeks by typical secondary lesions. He was treated with mercury by rubs, intramuscular injections, and by mouth for eighteen months. For about four years before his admission in 1916, he had suffered with ataxia, lightning pains, and gastric crises. The physical evidence of neurosyphilis in 1916 consisted of irregular, contracted pupils, barely reacting to light; absent knee and ankle jerks; ataxia; speech and memory defect; delusions of grandeur; tremor, and lack of insight. The blood Wassermann reaction was positive; examination of the spinal fluid disclosed 58 cells, globulin + + + +, Wassermann reaction positive with 0.1 c.c. of fluid, and a paretic colloidal gold curve. In spite of fairly energetic treatment, the patient died in 1917 of taboparesis.

The youngest son was infected with syphilis at the age of 20, in 1896. The diagnosis was made by the same physician who had treated the other two brothers. Internal treatment with mercury was given for some months. In 1912 he

had a lesion of the right testis and epididymis, diagnosed as tuberculous and removed by castration. The blood Wassermann reaction at this time was negative. This patient was first seen by us in September, 1922. He is said to have been acting peculiarly for some months, and his normal elder brother, knowing that he had had syphilis, persuaded him to submit to examination. This revealed unequal, irregular pupils, reacting sluggishly and slightly to light; the deep arm reflexes were present but the triceps particularly was sluggish; the patellar and ankle reflexes were absent, even on reinforcement; there was a positive Romberg sign. The blood Wassermann reaction was positive; the spinal fluid showed 146 cells, globulin + + + +, Wassermann reaction positive with 0.2 c.c. of fluid, and a colloidal gold curve reading 5554331000. The clinical diagnosis was taboparesis.

The first cousin of these three brothers also contracted syphilis in 1900, when 23 years old. His treatment was similar to that of the others. In 1912 he developed a paranoid psychosis necessitating institutional care. At this time, he showed physically no evidence of neurosyphilis except markedly exaggerated deep reflexes, but a study of his spinal fluid revealed 2 cells, globulin +, Wassermann reaction negative, and a colloidal gold curve of the syphilitic zone type. The diagnosis of asymptomatic neurosyphilis on this evidence is questionable. No details as to the subsequent course are available.

COMMENT

All the affected members of these three families are known to have been infected, not only at widely separated dates, but from different sources; yet in Family 1 two brothers showed evidence of central nervous system syphilis; in Family 2, the father and eldest son, infected at an interval of fifteen years, both developed eighth nerve deafness, and the youngest son asymptomatic neurosyphilis; and in Family 3, three brothers (possibly also a cousin) developed neurosyphilis, two of them taboparesis, one tabes dorsalis. Such an occurrence can best be explained on the basis of familial predisposition.

Reports similar to this are much less frequent in the literature than those dealing with conjugal neurosyphilis. An incomplete search, however, reveals two articles, by Strohmayer [2] and Burrow.[3] The first named reports the development of tabes dorsalis in two sisters with a diabetic and neuropathic ancestry. Burrow's family includes four certain cases of tabes and an additional probable one, among six members of a fraternity, all having acquired syphilis from different sources. The older literature contains many articles dealing with the question of predisposition and the inheritance of a tendency to develop neurosyphilis, a typical example being the paper by Näcke.[4] In general, however, the older investigators attempted only to show the existence of a familial neuropathic taint. Actual reports of several cases of neurosyphilis (other than congenital neurosyphilis) in a single family are lacking.

It is obvious from this report that the factor of personal, familial or racial predispostion to nervous system damage may, as pointed out by Nichols,[5] influence the course of events in syphilis. Partly for this reason the clinical data in favor of syphilis à virus nerveux are as yet insufficient to permit of a definite decision. Levaditi and Marie [6] have attempted to solve the problem from the experimental standpoint. They inoculated rabbits with a strain of organism said to have been obtained from the blood of a paretic (neurotropic virus), and compared this strain with a strain of spirochete obtained from a chancre (dermotropic virus); they noted wide differences in incubation period and in the macroscopic and microscopic appearance of the lesions. Cross-inoculations with their two strains were possible, and while the dermotropic strain retained its virulence for the human being in spite of years of animal passage, the neurotropic strain was shown to be avirulent for man. These results are open to two grave criticisms: (1) that the differences observed in the two strains are those to be found between any recently isolated strain of spirochete and one which has been carried in the animal for years; or (2) more likely, as is pointed out by Jahnel,[7] their neurotropic strain probably is *Treponema cuniculi* (*Spirochaeta paraluis-cuniculi*) the organism of spontaneous venereal spirochetosis in rabbits.[8] All of the peculiarities shown by the neurotropic strain of Levaditi and Marie have also been observed with *Treponema cuniculi*. These criticisms must be met by more detailed and careful experimentation before an answer can be reached.

SUMMARY AND CONCLUSIONS

1. In three families, of which two contained three members each, and one two members, who all acquired syphilis from different sources and at different dates, all developed neurosyphilis.

2. This occurrence can best be explained on the basis of familial predisposition.

3. The clinical and experimental evidence now available does not settle the question as to the existence of a neurotropic strain of *Spirochaeta pallida*.

316 Professional Building.

2. Strohmayer, W.: Familiäre Tabes auf erblich-degenerativer Grundlage, Neurol. Zentralbl. **26**: 754, 1907.

3. Burrow, J. L.: Familial Tabes Dorsalis, J. Neurol. & Psychopath. **1**: 246 (Nov.) 1920.

4. Näcke, P.: Erblichkeit und Prädisposition resp. Degeneration bei der progressiven Paralyse der Irren, Arch. f. Psychiat. u. Nervenkr. **41**: 295, 1906.

5. Nichols, H. J.: Observations on a Strain of Spirochaeta Pallida Isolated from the Nervous System, J. Exper. Med. **19**: 362, 1914.

6. Levatiti, C., and Marie, A.: Etudes sur le tréponème de la paralysie générale, Ann. de l'Inst. Pasteur **33**: 741, 1919.

7. Jahnel, F.: Das Problem der progressiven Paralyse, Ztschr. f. d. ges. Neurol. u. Psychiat. **78**: 166, 1922.

8. Noguchi, Hideyo: Venereal Spirochetosis in American Rabbits, J. Exper. Med. **35**: 391 (March) 1922.

RELATIVE VALUE OF SURGERY AND ROENTGEN RAY IN THE TREATMENT OF HYPERTHYROIDISM *

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Diseases of the thyroid gland are of interest to many branches of the medical profession. Aside from their great importance in clinical medicine, much remains to be learned about them from a physiologic and pathologic point of view. Not only is the thyroid frequently the seat of local changes, but through variation in its activity it exerts a profound effect on the organism as a whole. We may, therefore, logically classify cases of thyroid disease on two different bases: the basis of function and that of pathologic changes in the gland itself. On the first basis we may group them according to the activity of the thyroid, which may be excessive, normal or reduced, and, on the second, according to various histologic changes, of which the chief are hypertrophy and hyperplasia, the deposition of colloid, the presence of adenomas, of malignancy or

* Read before the Southern Surgical Association, Dec. 12, 1922.

* From the surgical service, the roentgen-ray department and the medical laboratories of the Massachusetts General Hospital. The metabolism studies were aided in part by a gift from Dr. William Norton Bullard.

of inflammation. Combining these two aspects of thyroid disease into one comprehensive system, which will satisfy both clinical and pathologic demands, is not simple. For the present we are interested solely in those cases of thyroid disease which show evidence of an associated constitutional disturbance, apparently due to a toxemia. While as yet there is no conclusive scientific proof of the cause of these symptoms, they are best explained in the main by an increased output of the active principle of the thyroid gland, thyroxin,[1] which apparently acts to stimulate oxidative processes throughout the body. This hypothesis, which associates evidence of toxemia with an increased activity of the thyroid, is accepted for the purposes of this paper, as being the best in accord with clinical observation.

Clinically, the determination of the basal metabolic rate gives us the relation of these increased oxidative changes to a normal standard. The degree of elevation of the basal metabolism enables us to approximate the extent of the thyroid activity. Increased basal metabolism is not only an essential concomitant to the diagnosis of increased thyroid function, but also the most accurate single measure by which to judge the progress of the disease and note the effect of treatment. It is not in itself a measure of the degree of operative risk in a given case, but it is an important factor to be taken into consideration with the clinical aspects.

Persistent increase of thyroid activity occurs, with rare exceptions, in conjunction with two types of changes in the thyroid gland, one a diffuse hypertrophy (hyperplasia), and the other an adenomatous change.[2] Associated with these two pathologic changes are two clinical types of disease. The first type is exophthalmic goiter, the second, adenomatous goiter with hyperthyroidism. For the clear recognition of the second type we are indebted to Plummer.[3] It differs clinically from exophthalmic goiter in developing at a somewhat greater average age in patients who have had a preexisting goiter for many years, in the absence of eye signs, and in the somewhat less intense nervous symptoms. It occurs in from 17 to 20 per cent. of the cases of adenomatous goiter in which resection was done at the Mayo Clinic.[2] For the constitutional disturbance associated with these two types of thyroid disease, hyperthyroidism is used as a convenient term, although it implies an assumption in regard to etiology not completely proved.

FORMS OF TREATMENT

In the present stage of the treatment of hyperthyroidism, the most effective measures aim at a partial destruction of the thyroid gland. Of these measures the ones that now appear to yield the best results are surgery and irradiation. Neither is a new form of treatment. Reports of the therapeutic use of the roentgen ray in exophthalmic goiter have appeared in the literature since 1905. In the Massachusetts General Hospital, a series of cases of hyperthyroidism treated by the roentgen ray was begun by Holmes in 1914. These results of the treatment were reported by Holmes and Merrill[4] in 1919. From the same clinic, Means and Aub,[5] using the basal metabolism as an index of intoxication in exophthalmic goiter, compared the effect of treatment by roentgen ray and by surgery.

Previous to the latter part of 1919, patients with hyperthyroidism coming to the Massachusetts General Hospital were treated, some by surgery and some by roentgen ray, without close cooperation between the two departments, and in occasional instances without detailed study by the medical services. For this reason it seemed wise to coordinate the efforts of the hospital. To this end, in October, 1919, a committee composed of two representatives from the medical, one from the roentgen-ray and three from the surgical services was formed which would have charge of the study and in most instances of the treatment of cases of thyroid disease. The present paper is based on cases studied and treated by the thyroid committee.[6] The conclusions drawn from the cases are my personal conclusions, and not those of the committee.

The results obtained in hyperthyroidism by irradiation with the roentgen ray was felt by the committee to be sufficiently encouraging to justify a continuation of this form of treatment in selected cases. At the same time the committee believes that roentgen-ray treatment should be limited, as stated by Holmes and Merrill,[4] to cases which show symptoms apparently due to increased function of the gland, such as increased metabolic rate, rapid heart action, nervousness, loss of weight and weakness. Goiters with normal or reduced function, requiring treatment for deformity, pressure on adjacent structures, potential malignancy, or potential hyperthyroidism, should be treated by surgery and not by roentgen ray. The only exception to this is in malignant goiter beyond reasonable hope of benefit from operation. Here the roentgen ray has an important rôle. Beyond this, the roentgen ray is not a treatment for goiter; it is a treatment for hyperthyroidism.

On what evidence should a diagnosis of hyperthyroidism be based? Persistent increase in the basal metabolic rate is considered necessary to confirm the usual clinical evidence in the diagnosis of hyperthyroidism. On the other hand, a basal metabolism consistently within normal limits should exclude hyperthyroidism. The only condition that would justify roentgen-ray treatment at all is obvious hyperthyroidism confirmed by increase in basal metabolism, or persistent and clearly marked increase of basal metabolism in a patient suggesting thyroid disease, who showed on careful study no other cause for increased metabolic rate.

Beyond accurate diagnosis there are certain other essential conditions without which roentgen-ray treatment should not be undertaken. The first is adequate modern roentgen-ray equipment, with ability to measure dosage. The second is means of estimating the degree of benefit obtained by determination of the basal metabolism as well as by clinical observation. Without this, a slight degree of persistent hyperthyroidism demanding further treatment may be continued when there is danger of myxedema. The third is careful and accurate clinical supervision. An open mind should be kept in regard to switching to surgical treatment, if improvement is not rapid and complete.

If these conditions are fulfilled, as I believe they have been in cases treated through the Massachusetts General Hospital thyroid clinic, what are the probabili-

1. Kendall, E. C.: Tr. A. Am. Phys., 1915, p. 420.
2. Plummer, H. S.: Oxford Medicine **3**: 839.
3. Plummer, H. S.: The Clinical and Pathologic Relationships of Hyperplastic and Nonhyperplastic Goiter, J. A. M. A. **61**: 650 (Aug. 30) 1913.
4. Holmes, G. W., and Merrill, A. S.: The Treatment of Thyrotoxicosis by Means of Roentgen Ray, J. A. M. A. **73**: 1693 (Nov. 29) 1919.
5. Means, J. H., and Aub, J. C.: A Study of Exophthalmic Goiter from the Point of View of the Basal Metabolism, J. A. M. A. **69**: 33 (July 7) 1917; Basal Metabolism in Exophthalmic Goiter, Arch. Int. Med. **24**: 645 (Dec.) 1919.
6. Dr. C. A. Porter, who supplied much of the surgical material, Dr. G. W. Holmes, Dr. J. H. Means, Dr. Malcolm Seymour and Dr. A. W. Allen.

ties of "cure" by the roentgen ray in selected cases? This necessitates a definition of "cure." When, as suggested by Dr. C. A. Porter, the basal metabolism is reduced permanently to within normal limits, we have done all that is possible by surgery or, possibly, by the roentgen ray, to produce a "cure." This does not necessarily mean that a roentgen-ray "cure" is as good as a surgical "cure." In either case, permanent organic change may have occurred which is beyond benefit, or symptoms from the underlying unknown cause of exophthalmic goiter, or from changes in the quality of the thyroid secretion may persist. It is hopeless to expect that surgery or the roentgen ray will relieve permanent organic damage caused by the disease. These patients as a group are likely to represent inferior risks during life. Permanent reduction of the metabolism to within normal limits is ordinarily accompanied by marked improvement, subjective and objective, and in this sense "cure" is used.

Means and Holmes [7] state that in a recent series of fifty-eight cases of hyperthyroidism treated by the roentgen ray, forty-four cases were exophthalmic goiter, and fourteen were classed as toxic adenoma. Of the forty-four exophthalmic patients, thirteen were apparently cured, and fifteen were improved but not rendered entirely free from hyperthyroidism. Sixteen showed little or no improvement; eight of the latter came to operation and were permanently cured. None of the patients seemed to be made worse by the treatment. Two of the patients that improved were later operated on, and one of these died. This was the only death known. Of fourteen patients with toxic adenoma, all improved and five were cured. A composite chart of metabolism, pulse and weight curves of twenty-eight patients with exophthalmic goiter that improved under roentgen-ray treatment showed a maximum benefit during the first four months of treatment. This chart (Chart 1) is reproduced here by permission of the authors. No further significant drop in pulse or metabolic curves occurred in the next six months in spite of more treatments. In the second year there was a slight drop. They conclude that the roentgen ray probably has a beneficial effect in toxic goiters; that about two thirds of the patients with exophthalmic goiters show either recovery or improvement coincident with the treatment, and that in exophthalmic goiter, if good results are not secured with the roentgen ray in a few months, surgery should be employed.

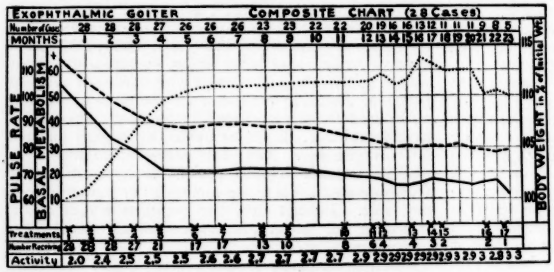

Chart 1 (from Means and Holmes).—In this and the accompanying charts, the solid black line denotes metabolism, the interrupted line pulse, and the dotted line weight. In this chart, X indicates roentgen-ray treatments, the figure below giving the number of that particular treatment. Under activity is indicated the magnitude of the rest factor. Three grades of activity have been arbitrarily selected: 1, complete rest in bed; 2, patient not in bed, but doing no work; 3, patient working or following usual mode of life. In the composite the averages of the individual activity figures are shown for each month.

In comparison with the foregoing series of cases treated by the roentgen ray, I have charted the metabolism, pulse and weight in thirty consecutive cases in which surgical treatment has been completed. The numerous metabolism determinations have been made under the direction of Dr. J. H. Means, to whom I am indebted for permission to use them. Complete surgical treatment is considered to consist of subtotal thyroidectomy, or the removal of the whole gland except an amount which, in the surgeon's judgment, is necessary to maintain normal thyroid function, usually consisting of the inner posterior portion of both lobes. Except in mild cases, this result is obtained by a series of graded operations. While ligation of the thyroid arteries, or hemithyroidectomy, is occasionally curative, these operations ordinarily represent only a stage which the patient passes through on the way to a subtotal thyroidectomy, and it is manifestly unfair to judge surgery by the results from these partial operations.

Of the thirty cases of subtotal thyroidectomy, twenty-five, or 85 per cent., showed a drop in metabolism to + 15 or less when last observed. Four cases with an average metabolism of 69 per cent. still showed evidence of hyperthyroidism, although clinically greatly improved, presumably because the surgeon failed to estimate correctly the amount of gland which should be removed to restore metabolism to within normal limits. In one mild case there has been hypertrophy of part of the remaining thyroid tissue, with return of symptoms, and the patient is now convalescing from removal of more of the gland.

An examination of Charts 1 and 2 will show that they are constructed on a similar plan. While both start out with the maximum number of cases, only relatively few cases are followed throughout the whole period. The number of cases figuring at any time is shown by the figure above each ordinate. The starting point taken in the surgical cases has been the last metabolism determination before operation. The curves obtained are in no sense end-result curves; they approximate, however, the results obtained in each class of cases as a group.

A comparison of the composite chart of the cases treated by roentgen ray and those treated by thyroidectomy shows that the average results in all cases treated by subtotal thyroidectomy are better than the results in a selected two thirds of the cases treated by roentgen ray. The metabolism shows a drop to about + 10, as compared with + 20 for the roentgen-ray cases; the pulse, a drop to 80, as compared with 90; the weight, a tendency to more persistent and greater increase. The rate of fall in metabolism and pulse is about equal in the two charts. The reason for this is that in certain of the patients who underwent ligation of both superior thyroid arteries, followed by thyroidectomy in two stages, the whole of the surgical treatment required four months, and in one case eight months for completion. For comparison, a composite chart of nine cases treated

7. Means, J. H., and Holmes, G. W.: Further Observations on the Roentgen-Ray Treatment of Toxic Goiter, Arch. Int. Med., to be published.

by immediate subtotal thyroidectomy in one stage is added. Here the sharp fall in metabolism and pulse and gain in weight is striking. There can be no doubt that the average results in surgery are better than those following roentgen-ray treatment.

RESULTS OF TREATMENT

In discussing these results, there are three questions of principal importance: 1. Is the improvement noted following roentgen-ray treatment due to fluctuation in the disease or to the treatment? 2. If the roentgen ray is used, what class of cases should it be used in? 3. If the results of surgery are better in general than those of the roentgen ray, why should the roentgen ray be used at all?

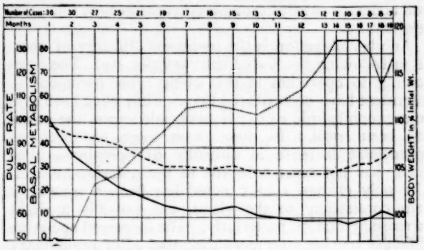

Chart 2.—Exophthalmic goiter composite chart, thirty consecutive cases, subtotal thyroidectomy: In this chart and Chart 3, the curves begin at the time of the first operative procedure; the averages used as a starting point are those obtained at the last metabolism determination before operation. This preceded operation by a variable period, which is not shown. The time in months should begin with zero, and not with one.

After seeing the cases treated by the roentgen ray, I have no hesitation in saying that I agree with Means and Holmes, and believe the improvement in the majority of instances at least due to the roentgen ray. In my opinion, the improvement coincident with the use of the roentgen ray is too sudden and striking to be accidental. In a few instances this is emphasized by a preliminary period of observation during which no change in the course of the disease occurred. In some cases the results of treatment are as brilliant as any I have seen by any therapeutic method. Nor is the improvement due to a long period of rest, as in the series of cases reported by Kessel, Lieb and Hyman.[8] While it has been thought desirable to carry out, when possible, a study of these cases in the hospital before instituting treatment, in the majority of cases there has been no marked change in the way of life. The average activity, as shown by Means and Holmes on Chart 1, has been between 2 and 3 on an arbitrary scale from 1 to 3, in which 1 represents rest in bed, 2, partial rest, in which the patient is up and about, but has rest periods and does not work, and 3, ordinary mode of life. If the roentgen ray were inert, we should expect patients to get worse as well as better. As a matter of fact, this has not occurred.

If the roentgen ray is effective in certain cases of goiter, is it possible to detect those cases in which it is likely to show good results? It has not proved possible to predict the effect of the roentgen ray in any given case. Means and Holmes[7] are unable to show that either the age of the patient or the intensity of the hyperthyroidism, as shown by the level of the metabolism, is a factor determining the success or lack of success of roentgen-ray treatment. An impression that recent cases in young persons were more responsive to the treatment was not borne out by their statistical study. There are, however, certain cases in which the roentgen ray seems to me unsuitable. Among these are adenoma with hyperthyroidism. Here the cause of the symptoms seems to be within the thyroid gland, and not only is it logical to remove this cause surgically, but the late results of operation are better than in exophthalmic goiter. Judd[9] reports 83 per cent. of cases of adenoma with hyperthyroidism cured by surgery, as compared with 65.8 per cent. of patients with exophthalmic goiter. Another group of cases consists of those showing organic damage, particularly cardiac. In these cases I believe that the time consumed by roentgen-ray treatment may lead to further damage. These patients need certain relief from their toxemia. This can be assured only by surgery. A course of roentgen-ray treatment may leave us four or five months along, and no better off. If the roentgen ray is used in these cases, it should be as an adjuvant to the effect of preliminary ligation of the thyroid arteries.

The economic situation may have a bearing on the choice of the roentgen ray or surgery. For instance, a wage earner may well desire the most rapid and certain means of cure. On the other hand, for a mother with several young children, it may be advisable to try the safer course of a series of roentgen-ray treatments. In general, it can be said that the roentgen ray should not be used in any case in which a few months without relief is likely to be productive of definite damage, or in adenomatous goiter with hyperthyroidism, except in unusual instances. If it is used, a definite time-limit should be fixed which I think could well be set for four months, during which the patient usually receives five treatments. If a satisfactory response to the roentgen ray has not been secured by this time, operation should be undertaken.

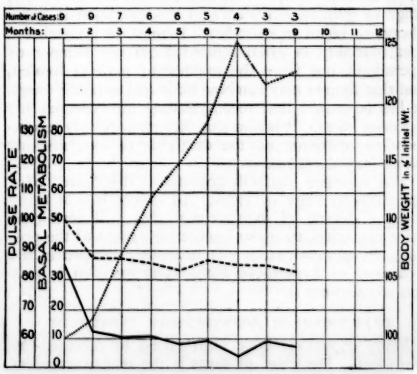

Chart 3.—Exophthalmic goiter composite chart, nine cases, subtotal thyroidectomy, one stage.

If surgery is more effective in the average case, why should the roentgen ray be used at all? Surgery is a clumsy form of treatment for a gland that is hyper-

8. Kessel, Leo; Lieb, C. C., and Hyman, H. T.: A Study of Exophthalmic Goiter and the Involuntary Nervous System, J. A. M. A. **79**: 1213 (Oct 7) 1922.

9. Judd, E. S.: Ann. Surg. **72**: 145 (Aug.) 1920.

active. In exophthalmic goiter, the ultimate cause of the disease is unknown. By removing part of the gland we are not affecting the cause; we are merely removing part of a gland that is excited to hyperfunction. The changes accompanying hyperfunction are still present in the part of the gland that remains. The amount of the gland left to maintain thyroid function is purely a guess on the part of the operator. When surgery can accomplish safely removal of a proper proportion of the gland, it has reached its limit. The roentgen ray, on the other hand, while also acting as a destructive physical agent, has nevertheless the possibility of indefinite expansion as a means of treatment. Improvements in technic and manner of application may lead to results as yet unobtained. It shows sufficient promise to be given opportunity.

Certain minor advantages have been claimed for roentgen-ray treatment. These are absence of operative scar, sparing the patient the distress and discomfort of going through operative procedures, and the fact that hospitalization may not be necessary. Although these advantages loom large in the minds of patients, hyperthyroidism is a sufficiently serious condition in its immediate and remote effects to make these advantages deserving of slight consideration in advising treatment.

The chief advantage of the roentgen ray is that its immediate mortality is nil. The use of the roentgen ray in our clinic is undoubtedly influenced by the fact that the mortality in the cases of hyperthyroidism treated surgically since the organization of the thyroid committee has been 7.1 per cent. There have been five deaths among seventy patients, in some of whom the surgical program is as yet incomplete. The surgical aspects will be presented later in detail. While the mortality from surgery reported from certain large clinics is small, this would probably not be true of small series and isolated cases compiled throughout the country. The stage of gaining experience in this condition is likely always to result in mortality. It must be remembered that mortality is often figured from the number of operations, not from the number of patients treated, and that figures may combine toxic and nontoxic cases. It has been said that recommending the roentgen ray has done harm. It is also true that unqualifiedly recommending operation on the diagnosis of exophthalmic goiter may do harm.

The roentgen ray will accomplish the "cure" of a certain percentage of cases. In others it will bring about a degree of improvement that will permit of safer operation, or make unnecessary some of the preliminary operative steps. It is another weapon in the treatment of hyperthyroidism. The question is how and when to use it.

OBJECTIONS TO ROENTGEN-RAY TREATMENT

Many objections have been raised to roentgen-ray treatment. The chief of these is the temporary relief afforded. While it is true that in certain cases there is a tendency for the metabolism to rise after a period within normal limits, these are a small minority. In these, as a rule, roentgen-ray treatment results in a second drop, to the normal metabolic level. On the whole, the results in cases brought to within normal metabolic limits seem to me satisfactory.

A second objection is the occurrence of myxedema. Means and Holmes[7] report that since the beginning of the roentgen-ray treatment at the Massachusetts General Hospital, four patients have developed myxedema. Two developed it within the first four months of roentgen-ray treatment. In both, the depression of metabolism proved temporary. One patient developed myxedema eighteen months after roentgen-ray treatment; another, five years after. Whether in these cases there is any actual connection between the treatment and the myxedema is uncertain. It seems to me that the danger of myxedema following controlled roentgen-ray treatment is more than balanced by the possibility of recurrent laryngeal nerve injury, particularly bilateral abductor paralysis, or parathyroid injury, following surgery.

Another objection is the increased difficulty of operation following the use of the roentgen ray. The cases coming to operation in this clinic after roentgen-ray treatment have been treated here. They have been as a rule exophthalmic cases; if toxic adenomas, the goiter has been small. In these cases there has been no appreciable increase in difficulty of operation. The gland has not been adherent to the anterior muscles. The only change I have noted has been a somewhat firm consistency to the gland, and possibly a slight increase in fixation posteriorly. The increased operative difficulty has been no more than that after preliminary ligation.

A fourth objection is the time required for roentgen-ray treatment. If the cases are carefully selected and the treatment is strictly limited to four months, this is not of great importance, compared with the possible benefit. It is not longer than the period that may be required for a graded series of preliminary operations.

My personal objections to roentgen-ray treatment are somewhat different. In the first place I cannot help fearing remote ill effects from so powerful and so little understood a physical agent. It can only be said that these as yet have not developed. Further, the suggestion of an alternative form of treatment, surgery or roentgen ray, lessens the authority of the clinic. It is hard under these conditions at times to carry out surgical procedures when they become advisable.

I have no quarrel with the cases apparently cured by the roentgen ray. These results seem to me sufficiently good. Nor am I troubled by the cases in which the roentgen ray frankly fails. These patients have lost time and have been put to trouble and expense, but they are willing to undergo operation, and the ultimate results are likely to be good. The patients improved, but not cured, seem to me a serious objection. They are sufficiently benefited to feel reasonably well and carry on their normal life and work with fair comfort. Still, they are distinctly and recognizably thyrotoxic. Basal metabolism may show a persistent elevation of from 15 to 25 points. Not infrequently they may present bizarre forms of hyperthyroid abnormality. In some cases the picture may be so close to normal that it is difficult to say whether operation is advisable or not. In other cases, thyroidectomy may be clearly indicated. But these patients are likely to refuse surgery. Here is the real objection. The patients recognize their great improvement, and since they are able to live and work in relative comfort, they do not wish to undergo operation. The ultimate fate of these patients is as yet uncertain. My feeling is that they go on receiving organic damage, and that their life and usefulness is shorter than it would be from the more complete cure possible by surgery.

A fourth class of cases, of no significance in determining the value of roentgen-ray treatment, is nevertheless of practical importance. These are the patients

that start roentgen-ray treatment and for one reason or another abandon it. It is true that many of these patients receive adequate surgical treatment elsewhere. Some undoubtedly do not, and in them the disease may progress without any adequate measures of relief. The fate of these patients is beyond the control of the clinic; a responsibility is assumed in regard to them which, through their own fault, cannot be fulfilled. It is possible that surgery might have been refused. At the same time a definite surgical program, once started on, is less likely to be abandoned.

It should be appreciated that there is no less responsibility in advising roentgen-ray treatment than in advising operation. The ill effects of the roentgen ray are more remote, and require more imagination to grasp. It should not be advised as a way of postponing a difficult decision on account of its lack of immediate danger. The man in charge of roentgen-ray treatment, like any other therapeutist, is likely to see little but good from his efforts. Some results are brilliant. Many other patients are much improved. The failures are likely to be operated on, or to drift away; in either case they disappear from the clinic. The harm that needs to be visualized comes, I believe, to these improved patients, through damaging effects of a slight persistent hyperthroidism. The stage of improvement without "cure" I believe to be the serious phase of roentgen-ray treatment; it should constantly be borne in mind.

If roentgen-ray treatment is advised at all, it should be with the clear understanding that it will be tried for only a few months; that relief is uncertain; that, if improvement is not sufficient at the end of that time, operation must be undertaken. The patient should know that operation will eventually be advisable more often than not.

CONCLUSIONS

1. Subtotal thyroidectomy is a more effective form of treatment of exophthalmic goiter than roentgen-ray treatment.

2. The roentgen ray has a beneficial effect in certain cases of hyperthyroidism.

3. This effect is not sufficiently constant to be relied on as the sole form of treatment. In selected cases of exophthalmic goiter, the use of roentgen-ray treatment under careful control is justifiable for a period of four months, during which the patient receives about five treatments.

4. If, after four months of treatment, the degree of improvement obtained in general condition and basal metabolic rate does not promise "cure," operation should be undertaken.

224 Beacon Street.

Investigations of Canned Meats.—A report on the bacteriology of canned meat and fish prepared by the food investigation board of Great Britain, recently issued, represents the first comprehensive study which has been made in that country of the bacteriology of canned food products. The board made a detailed examination of 323 cans of food, 246 of which were rejected. The most striking fact in the report is the nonsterility of cans which were externally sound. Less than 30 per cent. of these cans when examined were sterile; the percentage not sterile ranged from 36 for sardines to 100 for crab. Of canned meat, 63.6 per cent. of the cans were not sterile. This report, the *Lancet* states, gives the death blow to the generally accepted conclusion that canned foods remain good because the processes of preservation by heat have sterilized them.

RENAL GLYCOSURIA

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The advent of blood sugar studies made it possible to divide glycosurias into two general classes: (1) glycosuria with hyperglycemia and usually accompanied by symptoms, and (2) glycosuria with normal blood sugar, and no symptoms. The latter class comprises the so-called renal glycosurias. These glycosurias are usually discovered quite accidentally; they have normal or subnormal blood sugar findings; they are relatively independent of the carbohydrate intake, and they are without symptoms of diabetes mellitus. In some cases, however, the glycosurias disappear on a diet containing small amounts of carbohydrate or carbohydrate-free diets.

The renal glycosurias have of late aroused a great deal of interest because of their obscure etiology, relation to diabetes mellitus and ultimate prognosis. The commonly accepted theory is that renal glycosuria is due to a lowering of the kidney threshold for glucose, caused by an increase in the permeability of the kidney epithelium. This explanation has become so common that authorities talk about kidney permeability, glucose threshold, and the like as if these were well established facts. The vague labeling of unknown conditions is well expressed in a recent editorial in THE JOURNAL:[1]

> Why the "permeability" of the kidneys for sugar should hinge upon a definite concentration of the carbohydrate in the blood has never been clearly explained except by fantastic analogies; nor has it been clear why the renal threshold should "shift" under varying physiologic or pathologic conditions. In current discussions of sugar metabolism, the authorities have been wont to speak glibly of sugar "assimilation," "tolerance," "thresholds," and the like, without offering any really clear explanation of precisely what is meant.

This being the status of affairs, it is desirable to report another case that may possibly throw light on the etiology of renal glycosurias. The case here reported pertains to myself and presents a study over six years.

REPORT OF CASE

In 1916, I happened to discover 0.5 per cent. glucose in my urine. My instructor in physiologic chemistry thought that the glycosuria was due to an excessive intake of carbohydrate. The discovery the next day of 0.2 per cent. glucose following ingestion of a glass of milk and one slice of bread soon disproved the assumption, and led me to seek medical advice. My physician assured me of the harmless nature of the glycosuria, and advised me to determine my carbohydrate tolerance. Daily reductions of the carbohydrate amounts had no effect on the glycosuria until I reached about 30 gm. of carbohydrate in the form of starch. Any amount above 30 gm. would invariably cause glycosuria. At no time before or after the discovery of glucose in the urine did I have a sign or symptom of diabetes mellitus or of thyroid disturbance.

My past history was negative except for a case of measles at the age of 3. In my family history, there was no record of diabetes mellitus, or infectious or nervous diseases. My physical examination, except for a deflected septum and infected cryptic tonsils, was negative.

A complete lack of symptoms and an assurance of the harmless nature of the glycosuria led me to disregard the latter, and to continue my usual liberal carbohydrate intake.

A few months later, I tested my urine, on returning from a long walk, following a rich carbohydrate meal. To my surprise, the specimen was free from glucose. I tried this

1. Physiologic Glycosuria, editorial, J. A. M. A. **78**: 1462 (May 13) 1922.

experiment three times a day for two weeks, and ingestion of as much as 500 gm. of carbohydrate would cause no glycosuria, provided the meal was immediately followed by a walk of at least twenty minutes. If I rested for twenty minutes right after a meal, and then took a walk, glycosuria would invariably follow. The thought that this symptomless glycosuria might change into true diabetes mellitus influenced me to search for its cause.

In 1918, I had an attack of acute follicular tonsillitis, and was sick for a week. This attack, in addition to the fact that the tonsils were infected, led me to have a tonsillectomy performed with no other thought than the avoidance of further attacks. In spite of only one attack of tonsillitis, the tonsils were very much infected.

About six weeks after tonsillectomy, while analyzing the urine after a meal consisting of about 90 gm. of carbohydrate, I found no glucose in the urine. Any amount above 90 gm. would cause from 0.2 to 0.4 per cent. glucose. The blood sugar following the ingestion of 1.75 gm. of glucose per kilogram of body weight was pronounced perfectly normal by Dr. Olmsted of Barnes Hospital metabolism department.

The unexpected rise in carbohydrate tolerance following the removal of the faucial tonsils made me feel almost certain that a remaining focus of infection in the nasopharynx was keeping the carbohydrate tolerance down.

On reading Sluder's[2] article on the lingual tonsils as a focus of infection frequently taking the place of the faucial tonsils after the latter have been removed, I concluded that my lingual tonsils were infected. An examination of the lingual tonsil by Dr. Sluder proved the tonsil to be hypertrophied and chronically infected. After two weeks of treatment by applications of saturated solution of silver nitrate to the lingual tonsil, the carbohydrate tolerance rose to 150 gm. On cessation of treatments, the carbohydrate tolerance would drop back to 90 gm., and the tonsil would enlarge again. Since the tonsil showed no change, I was advised to have it removed. During the summer of 1920, I had the lingual tonsil cauterized.

The day following operation, while testing the urine an hour after the ingestion of a glass of milk, I found glucose. This sudden drop in tolerance continued for nearly a week until the slough at the site of the operation came off. Tolerance then began to rise, and by the end of the third week I was able to consume 100 gm. of pure glucose without glycosuria resulting. For nearly two years following the lingual tonsillectomy, repeated examinations of the urine revealed no glucose, in spite of the most liberal amounts of carbohydrate consumed.

Although the relation between the infected tonsils and the glycosuria was definite, the exact modus operandi remained unknown. Sluder's observations on the lingual tonsil as a cause of thyroid irritation, plus the fact that on several occasions thyroid extract caused glycosuria, suggested irritation of the thyroid as a possible cause of the symptomless glycosuria.

In June, 1922, I had to give up this hypothesis. A urine examination following a meal containing, probably, 300 gm. of carbohydrate revealed 0.42 per cent. glucose. About three months previous to this finding, I had reported the case to the Jackson County Medical Society as a case of renal glycosuria completely cleared up following removal of infected tonsils.

An examination of the pharynx revealed an infected piece of lingual tonsil. This time, I decided to postpone the removal of the tonsil until I had made a more thorough study of the glycosuria. A number of questions arose: Was the blood sugar still normal? What was the new carbohydrate tolerance? Was exercise still inhibiting glycosuria? Was there any endocrine disturbance? What rôle, if any, did the nervous system play in this glycosuria? To answer these questions, I made a number of experiments.

EXPERIMENTS

A blood analysis following ingestion of 100 gm. of glucose gave these data: fasting, 0.12 per cent.; first hour, 0.15 per cent.; second hour, 0.13 per cent.; third hour, 0.12 per cent. The three hourly urines showed 0.42 per cent. glucose. In other words, a normal blood sugar with glycosuria.

Experiments to determine the carbohydrate tolerance demonstrated that in the morning following a night's fast, I could consume any amount of carbyhydrate without a resultant glucosuria; in the afternoon, 120 gm. of carbohydrate would cause the excretion of 0.4 per cent. glucose in the urine; exercise for twenty minutes or more right after any carbohydrate intake would prevent glycosuria; exercise of less than twenty minutes' duration would fail to prevent glycosuria; exercise taken later than fifteen minutes after a carbohydrate meal would fail to prevent glycosuria.

While conducting the foregoing experiments, I observed that a change in weather had a peculiar influence on my carbohydrate tolerance. For many days, I could not understand why on some days glucose was excreted on an intake of 120 gm. of carbohydrate, whereas on other days as much as 500 gm. would cause no glycosuria. Repeated observations convinced me that cold weather had an inhibitive effect.

This peculiar relation between temperature and carbohydrate tolerance led me, a year before, to believe, erroneously, that in my case glycosuria was due to a thyroid disturbance, since my experiments with thyroid extract were conducted during warm weather.

Experiments with various endocrine products proved to be entirely negative. Thyroid extract taken until the pulse rate increased from 75 to 100 a minute caused no glycosuria, if the carbohydrate intake was less than 120 gm. Epinephrin chlorid, 1 c.c. of a 1:1,000 solution, hypodermically, caused no glycosuria on less than 120 gm. of carbohydrate, and no greater glucose output on a high carbohydrate intake than occurred without the epinephrin chlorid. Solution of the anterior and posterior lobes of the pituitary also failed to produce glycosuria.

One afternoon while looking at the lingual tonsil, I happened to press the laryngeal mirror against the posterior wall of the pharynx, and thereupon experienced a marked pressure under the middle of the sternum, evidently due to esophagospasm, caused by reflex stimulation of the vagus.

The fact that a mechanical stimulation of the pharynx reflexly stimulated the vagus, suggested that the toxins of the infected tonsils might act in a similar way, reflexly stimulating the vagus nerve endings in some of the organs concerned in carbohydrate metabolism. To prove this, I decided to remove the vagus influence by atropin sulphate, and accordingly, took 1/100 grain (0.00065 gm.) of atropin sulphate hypodermically, ten minutes afer ingestion of 120 gm. of carbohydrate. Hourly urine specimens for three hours failed to reveal any glucose. These experiments were repeated on seven successive days with diets ranging from 120 to 500 gm. of carbohydrate, and the results were identical. Moreover, I found that if I took the atropin later than ten minutes after carbohydrate ingestion glycosuria would invariably follow. In other words, the atropin sulphate had much the effect of exercise. Experiments with various doses of atropin sulphate proved that 1/100 grain was the smallest dose necessary to inhibit glycosuria. Blood sugar examination following ingestion of atropin failed to reveal any increase.

The peculiar similarity of action between atropin sulphate and exercise suggested that there was something common to atropin and exercise that inhibited glycosuria. Atropin and exercise had to be taken immediately after a carbohydrate meal; both had to be of definite quantities to produce the inhibitory effect.

The next interesting question was: What was the exact mechanism by which exercise produced the same effect as atropin sulphate? The fact that exercise was ineffective if taken one-half hour after carbohydrate intake led me to believe that it was not the burning of the glucose by the muscles during exercise that was responsible for the inhibitory effect on glycosuria, but probably the greater intake of oxygen during exercise. If exercise prevented glycosuria by a direct burning of glucose, as suggested by Allen,[3] why didn't exercise have the same effect, if taken one half hour instead of ten minutes after a carbohydrate meal?

2. Sluder, Greenfield: Some Clinical Observations on the Lingual Tonsil Concerning Goitre, Glossadymia and Local Infections, Am. J. M. Sc. **156**: 248 (Aug.) 1918.

3. Allen: Diabetes Mellitus, Nelson Loose-Leaf Living Medicine **3**: 99.

In other words, it seemed that there was something in the exercise that had to be supplied to the organs of carbohydrate metabolism before the glucose left the intestines and entered the portal circulation. To prove that this substance was oxygen, I performed the following experiments: Five minutes after a meal consisting of 300 gm. of carbohydrate, Dr. Ralph Duncan administered pure oxygen by the Barach method. Hourly urine examinations for three hours failed to show any glucose. A similar experiment performed twenty minutes after carbohydrate intake, instead of five minutes, resulted in the excretion of 0.44 per cent. glucose. The oxygen, then, behaved exactly like exercise. Both had to be taken right after a carbohydrate meal, and both had to be taken for a certain length of time. The evidence obtained from the foregoing experiments, then, is sufficient to convince one that exercise inhibited glycosuria by causing a greater intake of oxygen, and not by a direct burning of glucose.

COMMENT

The relation between the focal infection in the tonsils and the symptomless glycosuria is evident. The various processes involved in bringing about the glycosuria need further explanation. The rapidity with which glucose appeared in the urine, twenty minutes after carbohydrate intake, suggests that the glucose on reaching the liver met with some interference and passed through the latter without absorption. The fact that exercise right after carbohydrate intake absolutely prevented glycosuria suggests that exercise removed something that was depressing the liver cells. Exercise or oxygen if taken later than twenty minutes after carbohydrate intake failed to prevent glycosuria, suggesting that the glucose reaching the liver would be turned down, as it were, before the inhibition from the liver was removed. The fact that atropin sulphate invariably prevented glycosuria and that this drug has a selective depressing effect on the vagus endings would further suggest that the depression in the liver cells was due to some vagus disturbance.

In view of the fact that the splanchnics, on stimulation, cause a conversion of glycogen into glucose and greater discharge of the latter into the blood, it is possible that the vagi have the opposite effect; namely, on stimulation they inhibit the conversion of glucose into glycogen. From the negative results obtained with epinephrin chlorid, the effect of the splanchnics can be excluded in this case.

The absence of glycosuria in the morning in spite of the ingestion of 500 gm. of carbohydrate, and the appearance of glycosuria in the afternoon on 120 gm. of carbohydrate, is further evidence of a disturbance of glycogenesis. In the morning, following a night's fast, the liver, being depleted of its glycogen, would assimilate all the glucose brought to it; whereas, in the afternoon, having stored up enough glucose from the morning meal, it would be unable to assimilate more than 100 gm., sending the rest to the kidneys for elimination.

If we assume the foregoing hypothesis of stimulation of the vagi inhibiting glycogenesis, it is easy to conceive how the toxins from the infected tonsils could stimulate the glassopharyngeal nerves of the pharynx and, reflexly, the vagi. That the vagi can be reflexly stimulated by stimulation of the nasopharyngeal nerves has been shown by Auer,[4] who produced gastric inhibition by chemical and mechanical stimulation of the nasopharynx; and recently by Carlson and his associates.[5] The latter by stimulating the tongue and pharyngeal muscosa caused contractions of the cardia and lower esophagus in cats. These results were also obtained by tetanization of the central endings of the glossopharyngeal nerves.

The next interesting question is, Why should the kidneys excrete glucose, when it is at a normal level in the blood? If we admit the foregoing hypothesis of the toxins from the infected tonsils reflexly stimulating the vagi and thus inhibiting the conversion of glucose into glycogen in the liver cells, it is possible that the same toxins might stimulate the nerve endings in the cells of the kidney tubules, either reflexly or directly, in the process of their excretion from the kidney. This stimulation by increasing the excretory function of the epithelial cells causes a more rapid elimination of the glucose.

Whether or not this hypothesis explains the processes involved in the production of renal glycosuria, the facts brought out in this case are sufficient to throw some doubt on the existing theory of a lowering of the kidney threshold and an increased renal epithelium permeability as the cause of renal glycosuria. While I do not wish to convey the idea that infected tonsils are the cause of renal glycosuria, yet the fact that in none of the reported renal glycosuria cases is there any reference to an examination of lingual tonsils, and only such reference to examination of the faucial tonsils as "tonsils, negative," with no statement as to whether an attempt was made to express or aspirate the tonsillar contents, it is possible that some of the other reported cases have a similar focus of infection somewhere in the nasopharynx. A history of repeated attacks of tonsillitis, as my case demonstrates, is not at all necessary to justify a suspicion of chronically infected tonsils. In spite of only one attack of acute follicular tonsillitis, and a complete absence of symptoms from the lingual tonsils, there was enough infection in the tonsils to cause the symptomless glycosuria.

It is also possible that toxins from sources other than the nasopharynx might stimulate the vagus endings in the liver as well as the nerve endings in the epithelial cells of the kidneys, and cause symptomless glycosuria. It is quite likely that the glycosuria of pregnancy, having all the ear-marks of renal glycosuria and disappearing with the termination of pregnancy, is caused by the placental toxins, which, as is well known, have a special predilection for the liver and kidneys.

In view of the inhibitory effect of cold weather on my glycosuria, which is probably due to a greater intake of oxygen resulting from an increased metabolism, I have had to postpone further experimentation till next spring. In reporting the case in the meantime, I am hoping that those who have cases of renal glycosuria under observation may try the foregoing experiments, and thus determine whether the observations hold good for other cases of renal glycosuria.

SUMMARY AND CONCLUSION

1. The case here reported presents a glycosuria of six years' duration, since the first discovery of glucose, and without symptoms of diabetes mellitus.

2. It presents a glycosuria with normal blood sugar, but clearing up on ingestion of small quantities of carbohydrate, or with carbohydrate-free diets.

3. Exercise, if taken immediately after carbohydrate intake, and continued for not less than twenty minutes, absolutely prevented glycosuria, in spite of the most liberal carbohydrate intake.

4. Auer: Am. J. Physiol. **18**: 347, 1907; **25**: 334, 1910.

5. Carlson, A. J.; Boyd, T. E., and Pearcy, J. F.: Studies on the Visceral Sensory Nervous System, XIV, The Reflex Control of the Cardia and Lower End of Esophagus in Mammals, Am. J. Physiol. **61**: 14 (June) 1922.

4. Exercise would fail to prevent glycosuria, if taken fifteen minutes after carbohydrate intake.

5. The removal of infected faucial tonsils raised the carbohydrate tolerance to 90 gm.; whereas, the removal of infected lingual tonsils brought the carbohydrate tolerance up to normal and caused a complete disappearance of the glycosuria for nearly two years.

6. The reappearance of glycosuria was observed following reinfection of a remaining piece of lingual tonsil, following, however, intake of 120 gm. of carbohydrate, instead of 30 gm., as before the tonsillectomies.

7. There was an absence of glycosuria in the morning after intake of 500 gm. of carbohydrate and the reappearance of glycosuria after 120 gm. of carbohydrate in the afternoon.

8. Glycosuria would disappear in cold weather in spite of the most liberal amounts of carbohydrate, and reappear in warm weather on intake of 120 gm.

9. Exercise, oxygen or atropin sulphate, if taken immediately after carbohydrate intake, would absolutely prevent glycosuria, regardless of the amount of carbohydrate ingested.

It is suggested that renal glycosuria may be due to an inhibition of glycogenesis, caused by a reflex stimulation of the vagi. The inhibition of the vagi may be of various degrees. In cases with complete vagus inhibition, glycosuria occurs even on carbohydrate-free diets; whereas, in cases with partial vagus inhibition, glycosuria clears up on intake of small amounts of carbohydrate. The appearance of glucose in the urine in spite of a normal blood sugar may be explained by an increase in the excretory function of the kidney cells, caused by a stimulation of the nerve endings of the latter by the same stimulants that act on the vagi.

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SOME RECENT ADVANCES IN THE TREATMENT OF HEART DISEASE

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CHICAGO

During recent years, our conception of heart disease has been rapidly advanced by the new knowledge gathered by two precise graphic methods: the polygraph, for which Mackenzie and his co-workers are responsible, and the electrocardiograph, perfected by Einthoven, with which most of the pioneer work has been done by Thomas Lewis. The information given us by these two methods has radically revised our knowledge of heart failure, and has profoundly altered our conceptions of prognosis and treatment. Although much of this newer knowledge is based on the results obtained by workers with these instruments of precision, after one has mastered the information taught, the use of them is not necessary for ordinary clinical work, and no less an authority than Thomas Lewis says:

> While the pursuit of graphic work by those who possess the special aptitude and a developing interest in the method is decidedly to be encouraged, yet it is clear that a universal adoption of the graphic method is neither to be anticipated nor advocated. This conclusion is largely dictated by the belief that most of the every-day disturbances of the heart beat may now be identified by relatively simple means. If this is possible to a practitioner, then it is also possible for him to grasp the new general conceptions and to apply them to his daily work.

I will therefore discuss some of the newer knowledge of heart disease as it aids us in the prevention and treatment of cardiac failure. Another factor is the ever increasing importance attached to infection as a cause of cardiac failure, as opposed to the old and generally accepted theory of back pressure.

I consider the subject also especially timely because of the increased interest in it as a result of the recent rise in the prevalence and mortality from these diseases. Recent statistics show that the number of deaths from diseases of the heart is now twice as great as that from tuberculosis, pneumonia or cancer. A more widespread knowledge of recent advances in the prevention and treatment of this group of diseases is the most important factor in combating this condition.

I shall discuss six forms of cardiac arrythmia: (1) sinus arrythmia; (2) heart block; (3) premature contractions; (4) paroxysmal tachycardia; (5) auricular flutter, and (6) auricular fibrillation. I shall also discuss the treatment of cardiac diseases as influenced by the presence of one or more or these conditions. In addition, I shall also refer to the treatment of functional disturbances of the heart, including effort syndrome.

SINUS ARRYTHMIA

Irregularities of the heart produced by interference with the origin of rhythmic impulses at the sinus are termed sinus arrythmia. As these irregularities are usually not associated with any organic disease of the heart, and are usually but an exaggeration of a normal phenomenon due to respiration, occurring in children and in young adults, they neither should suggest nor require special treatment. It is very important, therefore, to recognize this type of irregularity, as failure to do so has frequently resulted in much unnecessary treatment, and has been the cause of much worry to patient and parent.

HEART BLOCK

Heart block is an abnormal heart mechanism in which there is a delay in, or absence of, ventricular responses to auricular impulses. There is no specific treatment for this condition, but the underlying associated cardiovascular disease should be treated. As this is frequently a manifestation of infection, the use of salicylates is indicated. Attention to the hygiene of the mouth and throat as a possible source of focal infection should be considered in every case. Syphilis, alcoholism and arteriosclerosis should be treated when present.

In cases of complete heart block, the occurrence of fits and their danger in causing accidents must be borne in mind. Gastro-intestinal disturbances should receive appropriate treatment. Digitalis, although an important cause of this condition, may be used if indicated by associated pathologic conditions. Heart block in itself should not be considered a cause for limiting the activities of the patient. Hypodermic injection of 10 minimis (0.6 c.c.) of 1:1,000 solution of epinephrin chlorid has been recommended and more recently advocated by Parkinson and Phear.[1]

PREMATURE CONTRACTIONS, OR EXTRASYSTOLES

Premature contractions, or extrasystoles, are contractions of the heart that disturb the rhythmic sequence by appearing early and in response to impulses newly

1. Parkinson, J., and Phear, A. G.: Lancet 1:933 (May 13) 1922.

formed in the myocardium. As in the case of heart block, we have no specific treatment for this condition when present, and the treatment should be directed toward the underlying pathologic condition. Here, again, it must be remembered that large doses of digitalis sometimes cause premature contractions; but digitalis is not necessarily contraindicated because of their presence.

Premature contractions are frequently present without evidence of serious organic disease, such as is manifested by signs of cardiac enlargement, and symptoms of cardiac embarrassment. In such cases, they are not in themselves evidences of serious disease, and do not call for any specific treatment. We often see this present in pregnant women, and in persons suffering with nervous conditions and many gastro-intestinal disturbances, especially those associated with flatulence.

PAROXYSMAL TACHYCARDIA

The term paroxysmal tachycardia is applied to several phemonena all characterized by rapid beating of the heart, usually ranging between 120 and 300 beats a minute, starting and ending quite abruptly. Some of these are cases of auricular fibrillation, some auricular flutter, and some simple paroxysms of tachycardia. The treatment of this condition consists of those measures intended to cut short the paroxysm during the attack, and those measures intended to prevent the paroxysms between attacks.

(*a*) *During Attack.*—There is no known specific remedy that is invariably valuable, and it is very difficult to estimate correctly the value of the various measures recommended, as the attacks are usually self-limited in duration. However, many remedies are found valuable for these attacks and should be tried. These are: changing posture, tight binder to the abdomen, ice bag to the precordium, and emetic drugs. The intravenous injection of $\frac{1}{100}$ grain of digitalin or $\frac{1}{250}$ grain of strophanthin is useful in some cases. Pressure on the vagus as it lies in the carotid sheath or over the supra-orbital nerve as it emerges from the supra-orbital foramen frequently gives almost miraculous relief. During prolonged attacks the diet should be bland and easily digestible, the bowels should be kept open, and cardiac failure, it present, should be appropriately treated by the usual means. Quinidin, which will be more fully discussed later, is valuable in cases of paroxysmal auricular fibrillation. The pain and insomnia, when present, should be controlled by morphin or chloral.

(*b*) *Between the Attacks.*—A careful search should be made for the etiologic factor, and, when present, it should be treated. The general health of the patient should be improved, and infections, especially of a rheumatic character, carefully treated. Foci of infection in the mouth, tonsils and abdomen should be carefully looked for. Digestive disturbances, especially those associated with flatulence, should be appropriately treated. The wearing of an abdominal belt has proved of great value in preventing these attacks. Pregnancy and general anesthetics are not necessarily contraindicated, nor should the activities of the patient be restricted unless serious disease of the heart is evident by other signs and symptoms.

AURICULAR FLUTTER

Auricular flutter is a condition in which the auricles beat at a very rapid rate, usually from 240 to 360 a minute. The paroxysms of auricular flutter should be treated along the same lines as those laid down for paroxysmal tachycardia. Auricular flutter, however, even if long continued, responds very successfully to digitalis therapy. Digitalis, given in full doses, practically always reduces the ventricular rate. As auricular flutter is due to circulating and never ending contraction waves in the auricle, digitalis creates a block in the auricles by obstructing the path of this circulating wave. Usually, it is found that full doses of digitalis convert the flutter into a fibrillation; and, when the digitalis is withdrawn, the fibrillation soon vanishes, and the normal rhythm is resumed. The corresponding improvement in the general condition of the patient occurs promptly with the restoration of the normal rhythm.

AURICULAR FIBRILLATION

In auricular fibrillation, the regular auricular contractions cease, and are replaced by fibrillatory twitchings of the auricular musculature. The normal impulses to the ventricle, being absent, are replaced by rapid and irregular ones, and the resultant ventricular contractions are very rapid and irregular as to strength and interval between beats. As this condition is present in the vast majority of cases of heart failure, its treatment is of great importance, and the reputation of the digitalis preparations in the successful treatment of heart failure is due to the favorable influence it has on the auricular fibrillation. Although the usual rules for the treatment of heart failure, such as rest, elimination and diet, must be instituted in every case, digitalis has an almost specific action in improving the condition of the patient. It acts by producing a partial heart block, in the bundle of His, abolishing most of the fine irregular impulses coming from the auricle, and reducing thereby the number of ventricular contractions. As the ventricular contractions become less frequent, each systole gains in strength, and the ideal condition is obtained when the ventricular rate approaches the normal of 72 a minute. (In counting ventricular systoles, it is important to listen over the heart as well as to palpate the radial pulse, as in this condition a pulse deficit at the radial is frequent.) This can be accomplished by the appropriate use of digitalis, if one understands its action and correct dosage. Although many preparations of the digitalis group have been used, I find that the tincture and the powdered leaf of digitalis are the most reliable, and will give satisfaction in practically all cases. It has been determined that full digitalization is accomplished by from 6 to 8 drams (22.5 to 30 c.c.) of the tincture, or from 36 to 48 grains (2.3 to 3 gm.) of the powdered leaf in the average adult weighing 150 pounds (68 kg.). The usual dose is from 20 to 30 minims (1.25 to 1.9 c.c.) of the tincture, or from 2 to 3 grains (0.13 to 0.195 gm.) of the powder given four times a day. Digitalization is completed in from four to six days.

In 1915, Eggleston [2] recommended the determination of the physiologic dose required, and advised giving the full dose in a very short time. I now give 1 dram (3.75 c.c) of the tincture or 6 grains (0.4 gm.) of the powder four times a day for one or two days until the full physiologic effect is obtained. Symptoms of overdigitalization must always be watched for, the three most reliable ones being nausea and vomiting, slowing of the pulse below 70, and the developing of coupling beats. When any of these symptoms are present, the drug must be immediately stopped. After digitalization is obtained,

2. Eggleston, Cary: Digitalis Dosage, Arch. Int. Med. **16**: 1 (July) 1915.

most cases require the saturation to be continued. This can be accomplished by administering the amount eliminated, which has been determined to be the equivalent of 2 grains (0.13 gm.) of powdered leaf, or 20 minims (1.25 c.c.) of the tincture daily. In cases in which the heart failure is extreme, and more rapid action of the drug is necessary, $\frac{1}{250}$ grain of strophanthin may be administered intravenously, and repeated every two hours for three doses. This, however, should be used only in those cases in which no digitalis has been previously administered.

De Meyer [3] recommended the intravenous administration of 1.5 mg. of physostigmin in tachycardia and auricular fibrillation. Enough work, however, has not been done with this remedy to warrant an opinion at the present time.

In 1914, Wenckebach [4] reported the results of treating a case of malaria in a Dutch merchant with quinin; an associated auricular fibrillation disappeared. In 1918, Frey [5] recommended quinidin sulphate for the treatment of auricular fibrillation, quinidin being the least toxic of the quinin derivatives. He reports favorable results in several cases. Since then, this drug has been used by clinicians in this country and in Europe, who report favorable results in more than 50 per cent. of the cases in which the normal rhythm is restored. In its action this drug differs from that of digitalis in that, whereas digitalis produces its favorable effect by reducing the number of ventricular contractions and does not influence the auricular fibrillation, quinidin, when successful, restores the normal rhythm. My own experience with about twenty cases in the last two years is even better than the average reported, as I have been able to obtain the normal rhythm in about two thirds of the cases. This drug, however, shows its greatest value in the more recent cases, as in the old and very seriously diseased hearts the normal rhythm, even when restored, did not continue very long. The usual dose is 5 grains (0.324 gm.) three or four times a day, which, when successful, will restore the normal rhythm in from four to six days, although in one of my cases it was restored after two doses, while in another, it took two weeks. In the severer cases, I continue the saturation with quinidin by administering 2 grains (0.13 gm.) three times a day for several weeks after the normal rhythm has been restored. As some patients have an idiosyncrasy against this drug, it is recommended that 2 grains be given three times a day for the first day, and then the regular doses be followed, if no untoward symptoms are manifested.

HEART FAILURE

There remains, however, a group of cases of heart failure not associated with auricular fibrillation, the treatment of which, therefore, is less satisfactory. Those due to syphilis should receive intensive antisyphilis treatment, although vascular syphilis responds less than that of other parts of the body. The goiter heart can be radically treated only by the removal of the toxic goiter. The digitalis preparations do not seem to influence these cases very much. The arteriosclerotic and hypertensive hearts must be treated by correcting and eliminating the factors of deleterious habits and mode of life which are responsible for most of these cases. In the primary endocardial cases which are usually rheumatic, the result of streptococcus infection, foci of infection must be carefully sought for and appropriately treated. These are usually to be found in the teeth, tonsils, accessory sinuses, pleura, gallbladder or appendix.

In all cases of cardiac failure, infection plays a much greater rôle than is generally recognized, and is the real cause of the dilatation rather than the back pressure or cardiac strain. This has been proved by carefully watching of the temperature during the failure when a slight and sometimes moderate rise has been found in many cases. The presence of a streptococcus bacteremia has been found by many who have taken cultures in cases of heart failure, and, at the Mount Sinai Hospital, since we have instituted routine blood culture in all these cases, we are finding viridant and hemolytic streptococci in many of our cases. This has great practical importance in treatment, leading to the paying of less attention to the element of strain and more to the treatment of foci of infection. On that basis, we are now using the salicylates and sodium cacodylate in all cases of cardiac failure associated with infection.

Pfalz,[6] stimulated by the work of Büdingen, recommended the use of glucose in the treatment of heart disease. Glucose being one of the most important sources of energy for the proper activities of the cardiac muscles, he recommends the infusion of 200 c.c. of 15 per cent. glucose daily.

Although digitalis is the ideal remedy in auricular fibrillation, it can be given also in heart failure with marked edema, and is not necessarily contraindicated in cases of aortic regurgitation, and high blood pressure.

FUNCTIONAL CONDITIONS OF THE HEART

There is also a group of cases generally classed as heart disease because of the presence of one or more symptoms or physical signs of heart disease. These cases are termed functional conditions of the heart because, as far as we know, they are not associated with pathologic conditions of the cardiac structure. It is of great importance to differentiate these from diseased hearts in order that the activities of these patients may not be restricted and that the treatment of these cases may be directed to the underlying or associated condition and not to the heart. I refer, particularly, to those in whom a systolic murmur or an abnormal rhythm is found as an isolated symptom.

EFFORT SYNDROME

Another class of cases closely allied to these are those known as soldiers' heart, irritable heart, neurocirculatory asthenia or effort syndrome. Warfield and Smith [7] reviewed 275 cases with symptoms of irritable heart, consisting of breathlessness, exhaustion, giddiness, faintness, palpitation, headache, lassitude and irritability. A careful investigation of these cases disclosed seventy-eight cases of hyperthyroidism; ninety-four of tuberculosis; thirty-three, normal; forty-one, bronchial asthma; four, cirrhosis of the liver, and four, irritable heart. In the treatment of these cases the constitutional defect and the psychoneurotic tendencies must be corrected.

SUMMARY

1. The newer knowledge of the mechanisms of the cardiac rhythm, particularly as disclosed by researches

3. De Meyer: Tr. French Congress of Medicine, 1920.
4. Wenckebach: Berl. klin. Wchnschr., 1914.
5. Frey, W.: Berl. klin. Wchnschr. **55**: 849, 1918.
6. Pfalz: Deutsch. med. Wchnschr., Oct. 23, 1913.
7. Warfield, L. M., and Smith, F. M.: J. Lab. & Clin. Med. **5**: 75 (Nov.) 1919.

with the electrocardiograph and polygraph, enables us to treat heart conditions more efficiently.

2. Cardiac failure is usually associated with auricular fibrillation, which, when present, responds very satisfactorily to digitalis medication. Proper dosage of digitalis is necessary. The method of large dosage is advocated.

3. Quinidin has proved successful in more than 50 per cent. of the cases of auricular fibrillation in restoring the normal rhythm.

4. The importance of infection as a factor in cardiac failure is too frequently overlooked, and the generally accepted theory of back pressure and cardiac strain should be abandoned in most cases.

5. Functional cardiac disturbances must be differentiated from serious organic disease, and treated accordingly.

6. Effort syndrome is usually not a cardiac disease, and the true diagnosis should be determined for its successful treatment.

104 South Michigan Avenue.

INFLUENCE OF VARIOUS SYMPTOMS IN THE PROGNOSIS OF PULMONARY TUBERCULOSIS

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In two previous communications [1] I have attempted to analyze the relative resultant effect of the presence, absence and location of râles, together with the importance during treatment of their increase and decrease, in the prognosis of pulmonary tuberculosis.

My purpose here is to determine the comparative value of certain symptoms in aiding us to predict for our patients something of their ultimate chances of recovery. This analysis, as in the two previous communications, is based on a study of one thousand consecutive admissions to the Trudeau Sanatorium during the years from 1907 to 1913. As twenty of these cases for one reason or another have not been included in these statistics, the tabulations are based on 980 cases. As a result of the follow up system employed at the sanatorium, we are able to tell the present condition, or, to be more exact, the condition in 1918, of all but less than 2 per cent. of these 980 patients.

The terms "well," "living," "dead" and "unknown" have been used to describe the state of health of these 980 patients in 1918, or from five to eleven years after discharge, "well" referring to those patients who have been apparently well and working for a period of at least two years, and "living" including either those who have relapsed or those of whom we can give no further information except the fact that they are still alive.

MODE OF ONSET

The first point to be considered is the mode of onset of the disease in these 980 cases, and the significance of its various types as regards prognosis. In considering the five most common types of onset, namely, the catarrhal, the insidious, the pleuritic, the hemoptysic and the febrile, we note from Table 1 that the way the disease began plays little or no part in determining its future course. In the five types of onset mentioned above, the "wells" vary only from 58 to 68 per cent., while the deaths vary from 20 to 27 per cent.

1. Trudeau, F. B.: Importance of Physical Signs in the Prognosis of Pulmonary Tuberculosis, Am. Rev. Tuberc. 4: 518 (Sept.) 1920; Presence, Absence and Location of Râles in the Prognosis of Pulmonary Tuberculosis, J. A. M. A. 77: 1326 (Oct. 22) 1921.

TABLE 1.—ONSET AND COURSE

			Condition in 1918							
			Well		Living		Dead		Unknown	
Type	No.	%	No.	%	No.	%	No.	%	No.	%
Catarrhal	473	48.26	289	61	70	15	110	23	4	1
Insidious, gradual	350	35.73	237	68	38	11	70	20	5	1
Pleuritic	72	7.34	42	58	14	19	15	21	1	2
Hemoptysic	50	5.1	33	66	5	10	12	24	—	—
Febrile	15	1.53	9	60	2	13	4	27	—	—
Gastric, dispeptic, indigestion	8	0.82	7	88	—	—	—	—	1	12
Glandular	5	0.51	3	60	1	20	1	20	—	—
Family history + t'b'p'n+	3	0.3	1	33	1	33	1	33	—	—
Fistula in ano	2	0.2	2	100	—	—	—	—	—	—
Pneumonia	2	0.2	1	50	—	—	1	50	—	—
Total	980	100	624		131		214		11	

SPUTUM

Among our 980 patients, 591, or 60 per cent., showed tubercle bacilli in the sputum, 464 of these while in the sanatorium and 127 before coming.

The grave importance of these findings as regards prognosis is clearly shown when we realize that only 53 per cent. of these patients whose sputum was positive are well and working, as contrasted with 79 per cent. among the negative cases, while the mortality among the positive cases, from five to eleven years after discharge, is 32 per cent., as compared to only 6 per cent. in the negative cases.

TABLE 2.—RELATION OF SPUTUM TO PROGNOSIS

			Condition in 1918							
			Well		Living		Dead		Unknown	
Type	No.	%	No.	%	No.	%	No.	%	No.	%
Negative	389	39.7	307	79	51	13	24	6	7	2
Positive	591	60.3	318	53	79	14	190	32	4	1
Total	980	100	625		130		214		11	

HEMOPTYSIS

Under the head of hemoptysis we have arbitrarily set the amount of one teaspoonful or more of blood as constituting a definite hemorrhage. Doubtless most of us are apt to consider the symptom as being of rather grave prognostic value in comparison to the absence of hemoptysis. The figures in Table 3 are surprising, for 61 per cent. of the hemoptysic patients are well and working, as compared to 65 per cent. of our non-bleeding patients, while the death rate is practically the same for the two types of cases; namely, 23 and 22 per cent.

TABLE 3.—PROGNOSTIC VALUE OF HEMOPTYSIS

			Condition in 1918							
			Well		Living		Dead		Unknown	
Type	No.	%	No.	%	No.	%	No.	%	No.	%
Negative	636	64.9	415	65	77	12	136	22	8	1
Positive	344	35.1	210	61	53	15	78	23	3	1
Total	980	100	625		130		214		11	

WEIGHT

Table 4 will illustrate the beneficial importance of a gain in weight among our tuberculous patients. More than 67 per cent. of these showed a gain in weight averaging 8½ pounds (4 kg.), as contrasted

to only 28 per cent. who lost weight, and approximately 5 per cent. whose weight remained stationary. Among those who gained, the figures for the "wells" and "deads" are 67 and 20 per cent., respectively, contrasted with 57 and 27 per cent. of those who lost weight. The forty-seven patients whose weight remained stationary did practically no better than those who showed a loss of weight.

TABLE 4.—SIGNIFICANCE OF GAIN IN WEIGHT

			Condition in 1918							
			Well		Living		Dead		Unknown	
Type	No.	%	No.	%	No.	%	No.	%	No.	%
Gain	657	67.04	441	67	81	12	127	20	8	1
Loss	276	28.16	157	57	42	15	75	27	2	1
Stationary	47	4.79	27	57	7	15	12	26	1	2
Total	980	100	625		130		214		11	

PULSE

The symptomatic importance in prognosis of the pulse is emphasized by Table 5. Cases are rated as "pulse positive" in this series in which a pulse rate of 90 or over persists for five consecutive days and diagnosis fails to reveal any other cause than tuberculosis. Sixty-nine per cent. of the negative pulse patients are well and working, as compared to only 49 per cent. of those having tachycardia, while only 16 per cent. of the former class are dead, as compared to 38 per cent. of the latter. The grave prognostic significance of rapid pulse is undoubtedly due largely to the fact that it is often accompanied by fever, which, as we shall see in Table 6, is the gravest of all symptoms that we have studied.

TABLE 5.—IMPORTANCE OF PULSE

			Condition in 1918							
			Well		Living		Dead		Unknown	
Type	No.	%	No.	%	No.	%	No.	%	No.	%
Negative	717	73.1	496	69	97	14	114	16	10	1
Positive	263	26.9	129	49	33	13	100	38	1	—
Total	980	100	625		130		214		11	

FEVER

Cases are here classified as "fever positive" when the patient's temperature was 99.5 F. or over for five consecutive days, which could not be explained by any other cause than tuberculosis. By reference to the figures in Table 6 it will be noted that the percentage of "deads" among our febrile patients is nearly as great as the percentage of "wells"; namely, 43 and 45 per cent., respectively, while of our afebrile patients 68 per cent. were well and working from five to eleven years after discharge, and only 17 per cent. had died.

TABLE 6.—SIGNIFICANCE OF FEVER

			Condition in 1918							
			Well		Living		Dead		Unknown	
Type	No.	%	No.	%	No.	%	No.	%	No.	%
Negative	809	82.6	548	68	110	14	141	17	10	1
Positive	171	17.4	77	45	20	12	73	43	1	—
Total	980	100	625		130		214		11	

SEX, FAMILY HISTORY AND STAGE OF DISEASE ON ADMITTANCE

Although not strictly classified as symptoms according to the title of this paper, it might be of interest to consider from a prognostic standpoint the influence of sex, family history and the stage of the disease on admittance to the institution.

Table 7 discloses that the proportion of males to females entering the institution is very nearly equal, as is the percentage of "wells" among the two sexes,

TABLE 7.—INFLUENCE OF SEX

			Condition in 1918							
			Well		Living		Dead		Unknown	
Type	No.	%	No.	%	No.	%	No.	%	No.	%
Male	522	53.27	329	63	55	11	133	25	5	1
Female	458	46.73	297	65	75	16	80	18	6	1
Total	980	100	626		130		213		11	

namely, 63 and 65 per cent., respectively; the males, however, have slightly the higher death rate in our series, with 25 per cent., as compared to 18 per cent. of the females.

In considering family history in this paper we have reference only to the immediate family; namely, father, mother, brothers or sisters. It is of interest to note that 30 per cent. of our cases have a positive family history, yet this fact seems not to have any prognostic

TABLE 8.—INFLUENCE OF FAMILY HISTORY

			Condition in 1918							
			Well		Living		Dead		Unknown	
Type	No.	%	No.	%	No.	%	No.	%	No.	%
Negative	690	70.4	441	64	90	13	153	22	6	1
Positive	290	29.6	184	63	40	14	61	21	5	2
Total	980	100	625		130		214		11	

value, as a study of the table reveals only a small variation in outcome as between our positive and negative family history cases.

Table 9 is indeed encouraging, for more than 78 per cent. of our patients in whom the disease was incipient have resumed normal life, while less than 10 per cent. have died. Even among those whose disease was moderately advanced, more than 70 per cent. are alive,

TABLE 9.—INFLUENCE OF STAGE OF DISEASE ON ADMITTANCE

			Condition in 1918							
			Well		Living		Dead		Unknown	
Type	No.	%	No.	%	No.	%	No.	%	No.	%
Incipient	352	35.92	275	78	43	12	28	8	6	2
Moderately advanced	612	62.45	350	57	84	14	173	28	5	1
Far advanced	16	1.63	4	25	3	19	9	56	—	—
Total	980	100	629		130		210		11	

although only 57 per cent. of these have been restored to good enough health to allow them to work. It seems, indeed, gratifying that there are 25 per cent. of "wells" among our far advanced cases.

TABLE 10.—TOTAL RESULT

	Number	Per Cent.
Well	625	64
Living	130	13
Dead	214	22
Unknown	11	1
Total	980	100

CONCLUSION

It might be interesting to note the present condition of these 980 patients, regardless of any symptoms,

except the fact that they were patients in the sanatorium. Two hundred and fourteen of these are dead, and eleven unknown. Of the deaths, 180, or 84 per cent., were caused by tuberculosis, and thirty-four from other causes, so that of 980 patients whose condition has warranted their admittance to the sanatorium, more than 75 per cent. are well or living from five to eleven years after discharge, while practically two out of every three of them have been restored to earning capacity.

105 Main Street.

PREVENTION OF PERITONEAL CONTAMINATION IN DRAINAGE OF ABDOMINAL ABSCESSES

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If, in the course of an operation for appendicitis, a well walled-off collection of pus is found, it is a common practice to enter the abscess, even if it is rather large, and remove the appendix. This is, of course, done in the hope or belief that contamination of the general peritoneal cavity will not result. Unfortunately, in mesiocolic, procecal and many retrocecal and subhepatic abscesses, it is impossible to enter the intraperitoneal abscess and remove the appendix without breaking up the protective peritoneal adhesions. Unless the abscess is large or so superficially situated as to reach the mural peritoneum, in which case the abscess cavity can be freely explored and drained without fresh soiling of uncontaminated peritoneal surfaces, it will hardly be denied that the exercise of great caution in the removal of the pus, for example, by way of an extraperitoneal canal to prevent additional peritoneal contamination, conforms to a surgical principle, the ignoring of which is fraught with danger. Therefore, if an appendical abscess can be drained without traversing a virgin peritoneal space, this should be done. In laterocolic extra-

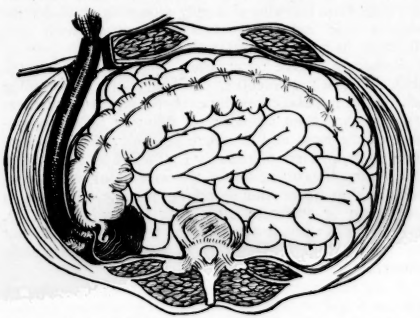

Fig. 1.—Large cigaret drain passed between mural peritoneum and abdominal musculature; tuft of gauze on inner end pressing intraperitoneally against abscess wall causes rupture and evacuation of abscess.

peritoneal abscesses and certain large intraperitoneal abscesses this will be easy of accomplishment; moreover, it can be done in retrocolic, intraperitoneal and extraperitoneal abscesses of smaller size and more sequestered location, if the correct avenue of approach is followed.

In the accompanying illustrations, two methods of safe drainage of deep seated intra-abdominal abscesses are presented. The first of the two methods to which it is desired to call attention has been used for many years, but too infrequently used by most operators, if I have been able to judge correctly by personal discussion of the subject with colleagues and by perusal of written treatises on this subject. The plan referred to is that of approaching a laterocolic or retrocolic

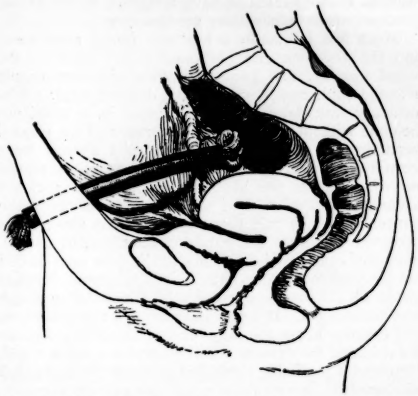

Fig. 2.—Cigaret drain passed to intra-abdominal surface of pelvic abscess; pressure of tuft of gauze may be expected to cause disintegration and spontaneous rupture of abscess wall after drainage well of adhesions has been formed.

abscess by an entirely extraperitoneal route; that is, the incision is made lateral to the classical appendix incision, and extends only to the peritoneum. The parietal peritoneum is then peeled away from the musculature of the flank, and the abscess opened bluntly at the bottom of the extraperitoneal canal thus formed.

Given a well defined retrocecal abscess as large as a hen's egg or larger, a certain mortality will follow attempt to remove the appendix and wipe out the pus through a ventral peritoneal incision. On the other hand, there should be practically no mortality following the opening of the abscess through an extraperitoneal avenue of approach. It is not, however, my object here to discuss at length any method of opening an intra-abdominal abscess at the time of operation; the foregoing reference has been made because the measure already described leads to another and more important consideration.

About fifteen years ago, in attempting to reach a retrocecal abscess as described above, it was found easily possible to peel off the peritoneum down to a position alongside the cecum; but the exploring finger found no ulcerated area through which a puncture could be made without danger of admitting virulent pus into the free peritoneal cavity. Therefore, the space alongside the cecum was loosely packed with two strands of gauze, between which a large rubber drainage tube was passed, the ends of the gauze and the drainage tube extruding at the wound in the flank. About eight hours after the operation, the abscess broke spontaneously, and a large amount of pus was discharged from the wound. The gauze was removed gradually, and the tube was taken out after ten days. There were no subsequent signs or symptoms of abscess, nor has there been any recurrence of appendi-

citis symptoms nor any intra-abdominal trouble of any kind in the years that have lapsed since the operation.

I have often dealt with abscesses consequent on appendicitis in this manner, and have been surprised to note how completely this plan of utilizing suction and chemotaxis has removed every vestige of infection in and about the appendix, and to observe how free patients thus operated on have remained, so far as any postoperative complications are concerned.

Much less frequently it has been found, after opening the abdomen and peritoneal cavity itself in the usual manner, that large appendical abscesses deeply situated could not be opened and drained safely in the ordinary transabdominal manner; that is, it could not be done without extensive contamination of the general peritoneum. Therefore, in such cases a very large cigaret drain with a protruding tuft of gauze was placed on the abscess, the abdominal wound being closed around the distal end of the tube. It has been the almost invariable rule that rupture of the abscess has occurred within forty-eight hours, but not, of course, until the canal established about the tube was sealed off by peritoneal adhesions. Thus, a transabdominal but to all purposes extraperitoneal avenue of drainage was constructed. It seems clear enough that adhesions and exudate about the inner end of the tube soften as the result of the dynamic effect of pressure, suction and chemotaxis focalizing the infection about the inner end of the tube.

In cases of acute appendicitis with a definite resisting mass in the right groin, prudence directs that the flank incision be made cautiously until the peritoneum is reached. If an abscess is opened before the peritoneum is reached, it will of course be very easy to provide ample and safe drainage. If, however, the peritoneum is found to be intact and movable over the underlying mass, the plan of peeling the peritoneum loose from

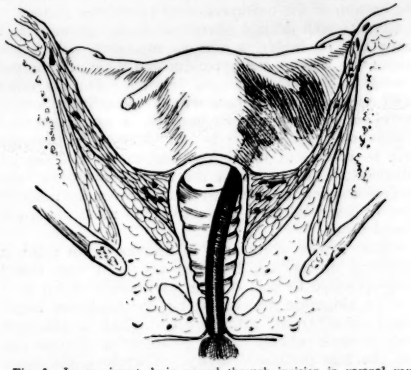

Fig. 3.—Large cigaret drain passed through incision in vaginal vault for purpose of inducing rupture of a high pelvic abscess.

the muscular abdominal wall and seeking a low point of puncture has much to recommend it. In such cases, after the peritoneum has been reached, a thorough exploration with the gloved finger should be made to determine whether a true abscess exists or whether the mass consists merely of the enlarged appendix, clumps of omentum and exudate. If no well defined fluctuating abscess is palpable through the intact peritoneum, the abdominal cavity should, of course, be entered and the appendix removed. If, however, an abscess is felt under the intact peritoneum, there is excellent reason for avoiding entrance into the free peritoneal cavity. In such an instance the abscess can be punctured low with the gloved finger and drained

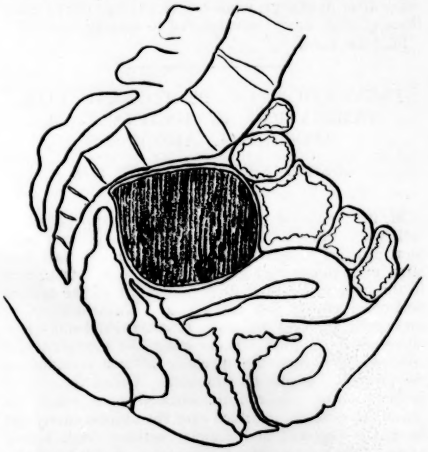

Fig. 4.—Pelvic abscess in position favorable for vaginal puncture as distinguished from abscess situated high and difficult of access, as in Figure 5.

through the space between the peritoneum and musculature. This offers an avenue of ample and safe drainage. If, however, the low puncture cannot be made without considerable risk of contamination of the general peritoneal cavity, then the tampon of gauze and the drainage tube introduced deeply alongside or under the abscess will induce spontaneous rupture with safe drainage in practically every case.

Rather extensive observation has shown, moreover, that in cases presenting difficulty in determining whether or not abscess really existed, ample seropurulent drainage has been attended or followed by disappearance of the mass and complete recovery of the patient. Therefore, in view of the relief afforded by the suction drain in such cases of doubt, the wisdom of opening up such a large mass and searching for the appendix in late acute or subacute cases may be doubted. This, however, does not imply that the appendix should not be removed in practically every case that is seen early enough.

It has transpired in my experience that the abdomen has been opened for the removal of pus tubes or confluent salpingo-oophoritis, whereas the principal seat of pus proved to be external to the peritoneum; that is, the intra-abdominal extraperitoneal pelvic abscess was situated so high up in the pelvis as not to admit of easy diagnosis by bimanual abdominal and vaginal examination. Such an abscess may occur unassociated with marked infection of the tube and ovary. An abscess so situated cannot always readily be reached through a vaginal puncture, and the folly of opening intra-abdominally such an abscess filled with hot pus at the time of the abdominal operation is, or should be, generally appreciated. The employment of the large

cigaret drain with the gauze tampon at the inner end will militate strongly on the side of safety; for, if the large rubber tube filled with gauze is placed against the intra-abdominal side of the peritoneum covering the pelvic abscess, the outer end of the tube projecting from the ventral wound, a deep well made up of protecting adhesions will quickly form about the tube, and as a rule within a day or two the abscess will rupture spontaneously and discharge through the walled off canal without contamination of the general peritoneum. It should be admitted that if the tubes and ovaries are definitely infected and are not removed at the time of the exploration because of the danger of rupture of the abscess, it may occasionally be necessary after the abscess has cleared up to reopen the abdominal wound for the removal of the infected adnexa. Certainly, this is not brilliant surgery; but brilliance in surgery may be said to belong to another day, and many good surgeons have expressed abomination of the word brillance as applied to their work.

The procedure described may be said to make for a tedious convalescence. That is true, and a tedious convalescence is a dull affair. It is much less brilliant than a funeral, but more satisfactory to the patient and surgeon. There are, no doubt, some who will look on the proposal given as one of atrocious demerit; but among these there will hardly be any who have had extensive experience with the plan.

A few times in my experience when attempts have been made to reach a pelvic abscess through a vaginal puncture it has appeared that further dissection about the uterus might result in a perforation of the pelvic peritoneum, and in such instances the tampon tube has been passed into the pelvic cellular tissue through the wound in the vaginal vault with the view of awaiting spontaneous rupture as the result of the dynamic effect of pressure, suction and chemotaxis. The rupture has almost invariably occurred after a few hours with ample drainage and eventual complete cure, except in cases of

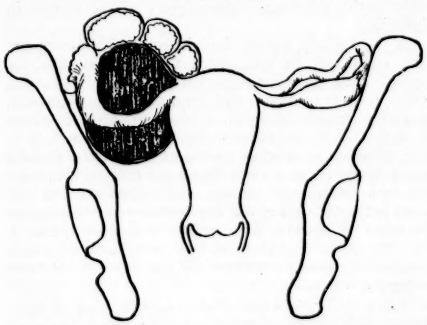

Fig. 5.—Pelvic abscess situated high up in the broad ligament; often difficult to open safely by vaginal puncture, unless quite large.

pelvic abscess attended with pyosalpinx or other associated pathologic changes, in such instances it being necessary later to remove the infected uterine adnexa through the abdomen. Perhaps many surgeons have made use of the procedure here described. They are presented for the reason that they are not generally employed in the relatively small percentage of cases suitable for their application.

In 1921, Ochsner [1] reported a case of abscess of the pancreas, interesting in this connection:

A woman, aged 48, with symptoms of ulcer of the greater curvature of the stomach, which later proved to be malignant, was subjected to an exploratory laparotomy which demonstrated an indurated mass 5 cm. in diameter in the posterior wall of the stomach attached to the tail of the pancreas, which was swollen to the size of an orange about 10 cm. in diameter. This swelling was congested and contained fluid. Evidently

Fig. 6.—Postponed rupture of abscess of pancreas; large cigaret drain passed down to abscess and abdomen closed; spontaneous rupture occurred a few hours later, after protective adhesions had formed about the tube. (Case of Dr. A. J. Ochsner.)

an abscess had formed in the tail of the pancreas from an infection originating in the perforated gastric ulcer.

In order to determine the condition more perfectly, an opening was torn in the transverse mesocolon, and the abscess was found strongly adherent to the posterior wall of the stomach, while the posterior wall of the pancreas was quite free. Great care was exercised in the manipulation of the pancreas not to rupture the abscess. An incision was then made in the left flank, immediately below the last rib, 5 cm. long, and a pair of forceps was passed forward, guided by one hand, in the abdominal cavity to a point behind the pancreas. The blades of the forceps were spread widely open in order to establish a broad passage. The space behind the pancreas was then loosely packed with gauze, in the middle of which was placed a large rubber drainage tube. The gauze and the drainage tube were passed out of the wound in the flank, and two cigaret drains were added and carefully placed behind the pancreas. The tear in the mesocolon was then repaired, and the abdominal wound was closed. Five days after the operation the abscess broke spontaneously, and a large amount of thick pus escaped. The gauze and the cigaret drains were removed gradually. The rubber tube was left in place for two weeks, when the discharge had been greatly reduced. The tube was then removed, and the wound healed in two more weeks.

1. Ochsner, A. J.: Paper read before American Surgical Association, Toronto, 1921.

Ossification of Arteries.—Ossification of the arteries probably occurs in about 6 per cent. of the vessels of the extremities which show severe arterial degeneration. It is more than twice as frequent in these vessels as in the aorta and cardiac valves. Ossification of the arteries takes place usually in the medial coat, though occasionally in the intima also. It follows medial calcification with or without endarteritis, but is most common where the two are combined. It is usually not associated with cartilage, but is the result of metaplasia of fibroblasts of the adjacent granulations as they impinge on the calcific plaques.—L. C. Knox, *Proc. New York Path. Soc.* **22**:115 (Jan.-May) 1922.

CLINICAL EXPERIENCE WITH KOLMER COMPLEMENT FIXATION TEST FOR SYPHILIS *

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More than fifteen years has elapsed since Wassermann and his collaborators first published their epochal work on the complement fixation test; since then no biologic test has received a more searching analysis. Aside from the volumes written on its original technic, numerous attempts at its refinement, with varying success, have been made (Noguchi, Hecht-Weinberg, Bauer modifications, etc.). Today no one questions the value of its aid in the diagnosis of syphilis. However, a considerable percentage of physicians still continue to regard this test with some degree of suspicion, and perhaps properly so, since reports on the same serum, when examined in different laboratories, are very often contradictory. This discrepancy may result from the carelessness or inexperience of the serologist, or it may be due to the fact that almost every serologist has introduced into the technic minor changes of his own. This has led to a marked diversity of opinion on almost every step of the test, a fact well known and deplored by all syphilologists. Because of this, the need for a standardized technic becomes at once apparent. With a standardized technic that is both specific and more sensitive than the older tests, we would possess a more reliable aid, not only in the diagnosis but likewise in the treatment of syphilis. A complement fixation test that would give no false positives, and fewer false negatives, would be a decided step forward.

With this end in view, Kolmer began an intensive study of every phase of the complement fixation test, requiring almost six years to complete. In January, 1922, he [1] published his final results, claiming for his new technic practical specificity, increased sensitiveness and, from the laboratory point of view economy, accuracy and simplicity of performance. Almost three years has elapsed since Kolmer's technic was introduced into our clinic. Its merits from a clinical point of view were discussed by Schamberg and Klauder [2] in a previous paper from this clinic and from private practice.

Since this publication, four other papers on the Kolmer test have appeared, and there has been a remarkable concordance of opinion among all of the writers. It is a significant fact that although all of them credit the new test with being distinctly more sensitive than the older methods, not a single instance of a false positive has been observed by any of them.

Shivers [3] employed the Kolmer test in 320 cases, and expressed the opinion that "the new method marks a distinct and valuable advance in the serum diagnosis of syphilis, being much more sensitive and at the same time yielding no falsely positive reactions."

Harper and Curtis [4] tried the Kolmer test in 120 cases, and they fully corroborate the clinical findings of Schamberg and Klauder. They write: "We regard the Kolmer modification of the Wassermann test as a most important advance, and one calculated to shed added light on the detection of obscure syphilis and in the ultimate determination of the factors of treatment."

Kilduffe [5] reports the results of a comparative study of 1,014 serums with the Kolmer test and the older routine method, and concludes that the Kolmer method possesses greater delicacy, flexibility and elasticity, and permits of quantitative reading. He did not observe any nonspecific reactions. Kilduffe concludes that Kolmer's method presents by far the most acceptable technic yet proposed for adoption as a standard method.

Palmer and Gibb [6] report on the use of Kolmer's test in 329 patients, strongly commend it, and conclude that it shows greater sensitivity and specificity and gives fewer anticomplimentary reactions.

The opinions hereafter expressed are based on a study of the histories of more than 400 syphilitic patients on whom more than 4,000 tests were performed.

From the standpoint of the syphilologist, the value of a complement fixation test depends, in the main, on two factors: (1) specificity (specific in the sense that it must indicate the presence or absence of syphilis, since it is not a specific test in the biologic sense), which is of primary importance, and (2) sensitiveness. The latter is particularly of value for the aid it may give in the early diagnosis of a chancre, in endosyphilis and in the control of treatment, as it is on this test alone that the syphilologist must later depend for his information as to the efficacy of treatment.

SPECIFICITY

The recognition of the specificity of a test for syphilis depends, on the one hand, on a positive outcome in the presence of the disease, (corroboration by the finding of *Spirochaeta pallida* or the presence of unquestionable clinical phenomena), and, on the other hand, on its negative outcome in the absence of the disease in question.

It is generally known that the original Wassermann test could not be considered absolutely specific for syphilis, since positive results were obtained in certain other disease processes and that, more important still, negative results occurred in the presence of known syphilis. With the older technic, positive reactions in the presence of disease processes other than syphilis were, however, rare (less than 1 per cent.); [3] but with the new technic our records tend to indicate that this does not occur, and in this experience we are confirmed by other observers. With respect to this point, Case 1 is cited because one of the few conditions in which positive reactions occur with the old technic is nodular leprosy:

CASE 1.—V. C., a white woman, aged 38, born in Italy, whose condition was diagnosed as nodular leprosy, the diagnosis being confirmed by microscopic examination, was referred to the genito-urinary clinic of another hospital for antisyphilitic treatment because of a 4 plus Wassermann reaction nine months before we saw her. During that period she received eight intravenous injections of neo-arsphenamin and fourteen intramuscular injections of mercuric salicylate. The treatment had no effect on the numerous leprous nodules or on four Wassermann tests at various times during this

* From the Research Institute of Cutaneous Medicine, and from the Polyclinic Hospital.

1. Kolmer, J. A.: Am. J. Syph. **6**: 64, 74, 82 (Jan.) 1922.
2. Schamberg, J. F., and Klauder, J. V.: M. Clinics N. America **5**: 667 (Nov.) 1921.
3. Shivers, C. H. D.: The Clinical Value of the Kolmer Complement Fixation Test for Syphilis, Arch. Dermat. & Syph. **6**: 344 (Sept.) 1922.
4. Harper, J., and Curtis, L. F.: The Kolmer Modification of the Wassermann Test, U. S. Naval M. Bull., November, 1922, p. 757.
5. Kilduffe, R. A.: The Kolmer Modification of the Wassermann Reaction, Arch. Dermat. & Syph. **6**: 709 (Dec.) 1922.
6. Palmer, L. J., and Gibb, W. E.: Experience with the Kolmer Quantitative Complement Fixation Test for Syphilis, Arch. Dermat. & Syph. **6**: 739 (Dec.) 1922.

treatment, which were each 4 plus. When first seen by us, in November, 1921, the patient's husband and five robust children were serologically tested, with the old technic, with negative results. A Kolmer test at this time on the patient's blood was negative. Dec. 20, 1921, the blood of the patient and of her new-born sixth child were negative with the Kolmer test.

When we come to study the question of negative reactions in known syphilitics, we find that they are fairly common, even with the most careful performance of the test. It must be recognized, of course, that all biologic tests, even when well performed, have their limitations, and the Wassermann test is no exception to the rule. Craig[7] agrees with most observers in estimating that fully 10 per cent. in primary, 5 per cent. in secondary and 12 per cent. in tertiary syphilis yield negative results with the Wassermann test as ordinarily performed. This may not be so important in the primary as it is in the secondary and tertiary stages, because in the first instance we possess the aid of the dark-field illuminator. These negatives are due to a lack of sensitiveness on the part of the old technic. On the other hand, the results obtained with the new technic are astonishing. In our series, eighty-four patients presented secondary, sixty-three tertiary, twenty-eight neurosyphilitic and twelve congenitally syphilitic lesions, diagnosed clinically and therapeutically; there were twelve primary lesions, the duration of each of which was more than fourteen days. All of these patients gave positive reactions by the Kolmer method.

SENSITIVENESS

No matter how sensitive a biologic test may be, its outcome depends on the presence of the reacting substances necessary to it. No complement fixation test can always yield positive results in the presence of the particular disease sought for, and this is just as true in syphilis as it is in tuberculosis, gonorrhea or sporotrichosis. The reason for this is that the complement fixing substance termed "reagin" by Neisser is not present at all times during the course of the infection. Furthermore, in syphilis at least, it may be present in one of the body fluids (spinal fluid) and not in another (blood). Again, as is well known, the disease may be and often is well on its way to the secondary stage before reagin apparently appears in the blood (only about 40 per cent. of the cases are positive in the first week of primary syphilis). Craig and others have likewise shown that, during the course of syphilis, reagin varies in amount from day to day in an inexplicable manner, and may even entirely disappear for from twenty-four to seventy-two hours after the ingestion of large amounts of alcohol. It is possible that this negativity may occur as a result of other as yet unknown influences. As a matter of fact, all syphilologists know that this apparent absence of reagin (which is followed by a reappearance at a variable period later) is often evident after a few treatments with antisyphilitic drugs, particularly the organic arsenicals. The latter fact should be emphasized, as an inexperienced physician may be misled into believing that cure has taken place. If all physicians would recognize that, once the Wassermann test has become positive in primary or secondary syphilitics, an adequate and fairly definite amount of treatment is required to reverse it and hold it negative for at least a two year period, then the pathologic changes of the tertiary and endosyphilitic phases of syphilis would be largely avoided; after these changes have taken place, no amount of treatment will remove the sclerosed structures following chronic syphilitic infiltrates. It is possible that some of the negative reactions in known syphilitics are so either because there is an actual absence of reagin, or because it is present in too small a quantity to be detected by the older and less delicate method. Our studies with the new test incline us to the belief that, in most instances, the latter is the correct explanation. In virtually all cases, we have found the new test far more sensitive than the older three antigen technic.

Schamberg and Klauder, Shivers, Harper and Curtis, Kilduffe, and Palmer and Gibb have already shown that with the new technic the complement fixation reaction becomes positive earlier in primary syphilis than it does with the old test. In the present series, the number of primary lesions seen early (before the tenth day) was too small to form the basis for the expression of an opinion. However, in a number of the primary lesions, the amount of reagin detected was greater with the new technic than with the older three antigen tests. The value of this is apparent, as many primary lesions are negative to the dark-field illuminator as the result of previous local treatment which has caused destruction of the surface spirochetes, and generally negative serologically because, as has already been stated, the time of appearance of reagin in the blood varies with the individual and the sensitiveness of the test.

The quantitative character of the new test enabled us better to follow the gradual diminution in reagin over a much longer period of time during the course of treatment than has heretofore been possible. Since it is in large part on the patient's serologic status that we depend for our knowledge of the efficacy of treatment, this fact alone gives the test a value not to be underestimated. In patients whose Wassermann reaction was persistently positive with the older technic, it was likewise so with the Kolmer test and usually in higher degree; many negative reactions after treatment with the old test were still positive with the new test.

The sensitiveness of the Kolmer test was particularly of value in the patients with active tertiary lesions. In some of these, the older three antigen technic gave negative reactions, whereas, with the new test, the reaction was positive. Some of these patients had had one or more negative reports from other laboratories, with resultant improper diagnosis and treatment. Only recently, we were again enabled to confirm our clinical diagnosis in a man with a nodular syphilid about the mouth, of a year and a half's duration, who had been treated during that time with salves, caustics and the roentgen ray because his Wassermann test had been negative.

In patients with a recurrent positive Wassermann reaction after treatment, we have observed that the reappearance of reagin is detected sooner by the new quantitative test. In common with other syphilologists, we have always regarded a single report of a weakly positive reaction as inconclusive, particularly in asymptomatic cases. In many of these symptomatic and asypmtomatic endosyphilitics, a higher reading with the new technic gave us greater assurance of the correctness of the diagnosis.

Space will not permit of the detailed report of many cases. A few selected from a large number will suffice to demonstrate the superior sensitiveness of the Kolmer test.

7. Craig, C. F.: Variations in the Strength of the Wassermann Reaction in Untreated Syphilitic Infections, J. A. M. A. **62**: 1232 (April 18) 1914.

ILLUSTRATIVE CASES

CASE 2.—R. P., a man, aged 45, contracted syphilis twenty years ago. He had inadequate and indifferent treatment. The pupils were sluggish and unequal; he was markedly nervous, and had a swelling in the metatarsal bones of one foot. He had recently had three negative blood Wassermann reactions in three different cities. As a result, no treatment was administered. A repetition of the test with the alcoholic extract of syphilitic liver, the acetone-insoluble lipoids and the cholesterolized antigen by Dr. Kolmer was likewise negative. With the Kolmer test, however, it was 4+, 2+, —, —, —, with the graded strengths of serum.

The spinal fluid was likewise negative with the old three antigen test, but with the Kolmer quantitative test it was 4+, 3+, —, —, —.

Intravenous treatment with neo-arsphenamin was carried out with the resultant disappearance of the swelling of the metatarsal bones and a general improvement in the patient's nervous and physical condition.

This case illustrates in a striking manner the importance of employing a sufficiently sensitive test.

CASE 3.—G. C., an old person with neurosyphilis, presented fixation of the pupils and a negative Wassermann reaction with the alcoholic extract of syphilitic liver and acetone-insoluble lipoids, and negative with the cholesterolized antigen, but with delayed hemolysis. The Kolmer quantitative test was 4+, 4+, 3+, —, —. The contrast here is pronounced.

CASE 4.—J. H. was an unrecognized neurosyphilitic patient with fixed pupils. The old three antigen test negative. The Kolmer test was 4+, 3+, 3+, —, —. Without the latter test, treatment might have been suspended.

CONCLUSIONS

1. The Kolmer complement fixation test is distinctly more sensitive than the routine three antigen method.

2. With its employment, the serums of syphilitic subjects are slower in becoming negative, thus insuring more adequate treatment. The test detects relapsing positives at an earlier period than the older method.

3. The quantitative character of the test enables the physician to determine more accurately the serologic status of the patient, and to gage the influence of treatment.

4. In a fairly large experience we have never observed a false positive by the Kolmer test.

5. We regard the Kolmer test as an invaluable advance in the serologic study of syphilis.

1922 Spruce Street—1714 Pine Street.

Vitamins.—Have you heard the story of McCollum's calves? It reads like a fairly tale. In the year 1906, three groups of heifer calves were selected and placed on diets chemically equal: the fat, protein, and carbohydrate contents of the three were identical as were, consequently, the caloric values. One group was fed on corn, another on oats, and the third on wheat—the complete plant, stalk, leaves, and kernel being used in each case. The calves grew and thrived and only minor differences were noted until they were grown and produced young. The cows that had been fed on a wheat diet from babyhood produced calves that were born dead and weighed only 40 to 50 pounds, while a normal calf at birth weighs from 75 to 80 pounds. The oat-fed cows brought forth calves practically normal in weight, but these too were born dead. The corn-fed cows produced calves that were normal in weight and that were on their feet within a few hours. Considered from a casual point of view, these results would seem to indicate the superiority of corn above other cereals. The real point of advantage lay in the larger amount of green leaves and stalk in the corn diet, rather than in the grain itself.—Moore, Nutrition of Mother and Child, J. B. Lippincott Company, 1923.

TRANSFUSION IN PURPURA HEMORRHAGICA

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During the last few months the blood service at the Boston City Hospital has dealt with a number of cases of purpura hemorrhagica of a severe and acute type. Our methods of treatment have probably been about the same as those of other clinics, but a survey of the literature would seem to indicate that our use of transfusions has been more persistent and vigorous than is common elsewhere. Certain determining factors bearing on this subject, while they are common knowledge among students of the hemorrhagic diseases, still lack the universal recognition that the urgency of the disease demands. The object of this brief report is to emphasize these facts and to illustrate their bearing on the subject of transfusion.

DETERMINING FACTORS

1. Hemorrhagic purpura is the result of a numerical decrease of blood platelets. It makes no difference whether we are dealing with a primary or an idiopathic case, whether the condition is secondary to infection, or whether it is part of a primary general aphasia of the marrow or a replacement aplasia, as in some leukemias. If platelets are sufficiently low, the hemorrhagic symptoms will be present, intermingled with those of the causative condition, just as lack of platelets will be evident in the blood picture, however complicated it may be. There is even experimental evidence that when the platelets are overpromptly destroyed after entering the blood stream, the same phenomena will occur.[1] One may venture a prophecy that the name "purpura hemorrhagica" will some day disappear, or be relegated to that of a symptom-group resulting from thrombopenia.

2. The life of a platelet in the blood stream is only a few days—certainly not more than a week.

3. There is a strong tendency toward recovery, or at least toward remission. Of course, this statement does not apply to the thrombopenia of aplastic anemia or of acute leukemia, and in the secondary group of purpuras the tendency and duration are more or less dependent on the underlying infection. But most of the so-called idiopathic cases of purpura hemorrhagica do tend to recovery, although the patients are apt to suffer intermittent relapses, the later attacks being sometimes severer, but commonly milder than the earlier ones.

OBJECTS OF TRANSFUSION

The objects of transfusion are, as in all hemorrhagic diatheses, twofold: First, to mitigate the anemia. This is not very important in the disease under consideration, except in severe and advanced cases. In straight purpura hemorrhagica there is no trouble with the red cell forming function of the marrow, and once the bleeding has ceased, recovery from anemia is usually prompt and satisfactory. The second and more important object of transfusion is to control the bleeding. This implies supplying enough platelets to permit natural hemostasis to occur.

The primary object of transfusion being to increase the number of platelets in the patient's blood, the question arises as to how largely the count is affected by this procedure. In our experience, a single transfusion

1. Lee, R. I., and Robertson, O. H.: J. M. Res. 33: 323 (Jan.) 1916.

seldom increases the patient's platelet count by more than 20,000. Obviously, it is desirable to give large transfusions. The patients are mostly young persons, with normal hearts, and there is little danger from overtransfusion. They can safely and advantageously receive as much blood as the donors can safely supply. We do not, therefore, advise small transfusions.

For the same reason we feel strongly that citrated blood is greatly inferior, in this disease at least, to whole, unmodified blood. In citrate transfusions, large numbers of platelets stick to the gauze filter and to the glassware, as can easily be proved by staining scrapings from the latter. To show how considerable the loss is, 0.1 per cent. of sodium citrate was added to the blood of a patient whose platelet count was 102,000. After a half hour the citrated blood contained only 18,000 platelets. The loss is very much less if paraffined tubes are used. For example, a donor's platelets were 280,000 immediately before a transfusion by Kimpton's method. A count of the platelets in a small quantity of blood left in the tube at the end of operation gave 220,000. I am aware of the paradoxical fact that, while citrate is used to prevent coagulation of blood outside the body, its action when injected is to shorten coagulation time, and that it has been used clinically for this purpose; but this has little to do with purpura hemorrhagica, in which coagulation time is not impaired. Indeed, there is reason to believe that citrate injections act by destroying platelets, thereby releasing substances that assist coagulation.[2] I would not go so far as to say that citrate transfusions should never be used in the disease under consideration—some good observers have had success with them. But both theory and experience seem to point unmistakably to the superiority of other methods when they are available. Perhaps direct, arm-to-arm transfusion by the original Crile technic has theoretical advantages, but for practical uses paraffined tubes are, of course, preferable. All of our transfusions have been done by the Kimpton-Brown method.

Another point is that usually more than one transfusion will be needed. Indeed, the first one may have no visible effect. A brief consideration of the facts already noted readily explains this. Hemorrhages generally begin when the platelets have fallen to some fifty or seventy-five thousand. By the time the patient comes to the table for this first transfusion, they may have fallen so far below this number that a single transfusion, however large and however efficiently performed, will not put them back to the point at which bleeding will be controlled. Several may be needed and, in view of the short life of the platelet, the intervals must be brief—not more than forty-eight hours. Even when the hemorrhages have been controlled, there is no certainty that they will not recur. If they do, transfusion should be repeated at once without reference to the presence or absence of anemia. Nothing is gained by delay, especially if the platelet count shows steady diminution; control will be more difficult each day one waits. Only boldness and persistence in transfusing will save life in severe cases. One cannot begin to feel safe until the patient has gone on without bleeding for a period considerably beyond the life of a platelet—say, ten days.

Let me add that the platelet count is not a very good criterion. Platelet counting is at best inaccurate. After cases have gone on for a month or so, they are apt not to run true to type, and we have been much perplexed by a discrepancy between our counts and our stained smears. The former may show more than 100,000 platelets, and yet they may be almost absent from the smears. The presence or absence of bleeding from the nose and gums is a more reliable guide.

2. Neuhof, H., and Hirshfeld, S.: Ann. Surg. **76**:1 (July) 1922.

REPORT OF ILLUSTRATIVE CASES

CASE 1.—F. C., a man, aged 60, seen in consultation with Dr. F. H. Hubbard of Taunton, had been bleeding three weeks from the nose and gums, and the skin showed small purpuric spots and a few deeper ecchymoses. The bleeding time was fifteen minutes; no platelets were recognizable in the smears. Six days later, transfusion of 500 c.c. was done by the paraffined tube method. Next day the patient was admitted to the City Hospital, with moderate anemia and a platelet count of 44,000, still bleeding slightly from the nose. After an interval of five days, a second transfusion was done by Dr. Kimpton, again without much benefit. More or less oozing continued for a week, when a third transfusion (600 c.c.) was done. Bleeding then stopped completely, but in six days a fourth transfusion (500 c.c.) was required. The platelets fluctuated from 28,000 to 44,000 for the next fortnight, and, as might be expected, there was a little bleeding from time to time. Then the platelets began to rise steadily, and the hemorrhagic tendency ceased. Now, eleven months from the onset, the patient is apparently well. His last platelet count was 232,000, and the bleeding-time two and one-half minutes. Smears show plenty of platelets. He works steadily as a millwright, and though he often gets scratches and slight injuries, there is no tendency to abnormal bleeding.

CASE 2.—L. C., a boy, aged 8, had had nosebleed for five days. There were also skin hemorrhages of the two types almost always seen in this disease—fine, superficial, purpuric spots, and larger and deeper ecchymoses, the latter probably resulting from slight injuries. The platelets were 70,000, and there was moderately severe secondary anemia, with leukocytosis. The nosebleed stopped immediately after a transfusion of 450 c.c. by Dr. Kimpton. Two days later, with a platelet count of 76,000, there was a nosebleed, and on the fourth day another, so severe as to require a second transfusion (550 c.c). The next day the platelet count was 240,000, though few were visible in the smears. This sudden increase, far beyond what could have resulted from transfusion, can only mean a sudden resumption of the function of platelet making by the marrow. Needless to say, there were no further hemorrhages, and he was shortly discharged with a count of 348,000, and a smear showing "loads of platelets."

CASE 3.—A. M., a girl, aged 17, had bled from the nose and gums for three weeks. The face and ankles were puffy, and there were numerous ecchymoses and purpuric spots. There was rather severe secondary anemia; the platelets numbered 58,000; the bleeding time was twenty-two minutes. Next day transfusion (600 c.c.) was done by Dr. Loder. The platelets rose to 80,000, but the bleeding continued, from the transfusion wound as well as from the nose. In forty-eight hours a second transfusion (500 c.c.) was done, with little benefit. The third and fourth transfusions, of 500 and 600 c.c., respectively, were done after intervals of three days and the fifth (550 c.c.), after two days. Two days more and again she had a nosebleed and vomited some bright blood, the platelets being 52,000. Five days after the fifth transfusion they had fallen to 34,000, and hemorrhages of increasing severity required a sixth transfusion of 500 c.c. after an interval of ten days. The platelets then increased to 112,000, and there were no more hemorrhages. In the meantime, however, she developed acute nephritis and pericarditis with effusion. About a month after the last transfusion there was vomiting and intense abdominal pain, with tenderness and rigidity in the lower right abdomen. In view of her serious condition and the existence of hemorrhagic disease, operation was deferred and the acute symptoms soon cleared up. She continued, however, to have a septic temperature, and finally died nearly two months after the last transfusion. Necropsy showed gangrenous appendicitis, with a large abscess cavity, and fibrinopurulent pericarditis. The red marrow showed a normal number of megakaryocytes.

COMMENT

These three cases have been selected because they illustrate what may be expected of bold and persistent transfusion in typical acute cases of a distinctly desperate type. Not all fall into this category. We have had one patient who recovered promptly and completely, though perhaps not permanently, after a single transfusion. Another was a chronic case, which ran quite a different course. Each transfusion sufficed to prevent bleeding for several weeks. After four or five recurrences at intervals corresponding to the menses, the tendency seemed to cease, and she was discharged apparently well. Some of these chronic and persistent cases, after a while, become quite bizarre and atypical. What, for example, can be said of a boy, aged 2, who developed perfectly typical purpura hemorrhagica while under treatment for diphtheria in the contagious department? After several transfusions his bleeding was controlled, only to relapse repeatedly. After nineteen months, during which Dr. Kimpton did twenty-eight transfusions and the family's stock of patience and money was exhausted, he died. During the greater part of his illness the platelets were above normal, sometimes over a million. The coagulation time was never more than slightly increased. Such cases are hard to explain, and leave one with the feeling that there is much to be learned about hemorrhagic diseases.

912 Beacon Street.

PERIRENAL TUMORS

REPORT OF CASE

ROBERT V. DAY, M.D.
LOS ANGELES

In defining paranephritic tumors, Lecene [1] states that "this term applies to such retroperitoneal neoplasms as seem to have intimate anatomic relations with an otherwise normal kidney and which appear to have developed at the expense of either the fibrous capsule or the cellulo-adipose covering of the kidney."

REPORT OF CASE

History.—Mrs. B. K., aged 43, admitted to Los Angeles County Hospital, Oct. 4, 1921, complained of a large tumor mass in the right kidney region, pain, constipation, slight nocturia, nausea and vomiting, and loss of weight and strength. About March 1, 1921, the patient first noticed dizzy spells and vomiting, which were severe at times. This kept up until about the first of August, when she noticed a mass forming in the right of the abdomen, which rapidly enlarged into the present large palpable tumor. The family history was irrelevant.

Examination.—There were no abnormalities excepting in the abdomen, the upper two thirds of the right half being filled with a firm, bulging mass, irregular in outline, extending 1 inch to the left of the umbilicus, and 2 inches below the costal margin. The mass moved on respiration, and was only slightly tender. There was no history of hematuria, infection or other urinary disturbance.

October 6, the cystoscope was introduced and both ureters were catheterized. The bladder was normal but, owing perhaps to the pernicious and constant vomiting and inability to take water, there was practically no urine. Doubtless, also, there was reflex inhibition of renal function as regards dye output, for no phenolsulphonephthalein was excreted in fifteen minutes from either side, and there was no bladder leakage. The right pyelogram disclosed a practically normal pelvis, displaced mesially and partially overlying the spine. A good pelvic outline was obtained, and normal major and minor calices were well shown. There was no kidney outline shown on a simple film.

October 8, a combined phenolsulphonephthalein test made in the ward showed 45 per cent. in the first half hour and 20 per cent. in the second half hour. October 10, the ureters were again catheterized. The output of phenolsulphonephthalein in twenty minutes was 2.5 per cent. from the right side; there was some urine, but no phenolsulphonephthalein from the left side, and no bladder leakage of dye. The patient's urinary function was undoubtedly reflexly inhibited from the stress and discomfort of the cystoscopic procedure, since there was no dye output on the sixth and almost none on the tenth; but there was normal urine and a high output on the eighth when taken in the ward without cystoscopy.

A normal but displaced pyelogram with a tumor of such enormous size was evidence that the growth was cerainly not primary in the kidney itself, as no growth of this size could possibly have its origin and principal development in the kidney substance without marked filling defect in the kidney pelvis. The diagnosis made at that time was perirenal neoplasm, but further and more specific information as to its origin from a particular organ or tissue, and what organs were involved or invaded by its growth, could not be foretold, although it was evident from its rapid growth that the tumor was malignant.

Operation and Result.—I felt that an operation would subject the patient to very grave immediate danger, and that the prognosis as to recurrence would be extremely bad if surgery was done, while a pancreatic or duodenal fistula was more than possible. Furthermore, nephrectomy might be necessary, and apparently the right kidney had quite as good a function as the other; so we felt that the case was inoperable. The patient, however, pleaded for an operation, and the internists who saw her thought she was entitled to her chance. She was, therefore, transferred to the general surgical ward and to the service of a member of the general surgical staff; October 22, she was operated on by Dr. A. B. Cooke, who reported that the operation presented no special difficulties. A right rectus incision was employed. When the abdomen was opened, it was apparent that the tumor was retroperitoneal. On account of its size and the dense adhesions present, the tumor was enucleated from its bed from the mesial side. The only untoward occurrence was a small injury to the vena cava at the junction of the renal vein, which was clamped and ligated in continuity. The patient left the operating room in excellent condition, only a few minutes more than one hour having been consumed in the entire procedure. Technically the operation was a transperitoneal nephrectomy.

The tumor weighed 8 pounds (3.6 kg.). The mass, when removed, resembled a kidney in outline. In order that the kidney itself might be seen, however, the mass had to be bisected, a reproduction of which is presented in the accompanying illustration. The kidney was examined by three pathologists, and proved to be a fibromyxosarcoma. At no point was the kidney, its fibrous capsule, or the ureter invaded. In addition to belonging in a rare class of neoplasms, the unique feature was the fact that the tumor was circumrenal, and the enormous mass symmetrically arranged around a normal kidney retained its typically reniform appearance.

The patient died on the twenty-second day after the operation.

Necropsy.—The anatomic diagnosis was: (1) compensatory hypertrophy of the left kidney; (2) dorsal decubitus of the left sacrum; (3) no metastases; (4) right suprarenal apparently not involved or invaded; (5) limited peritonitis involving the upper abdomen.

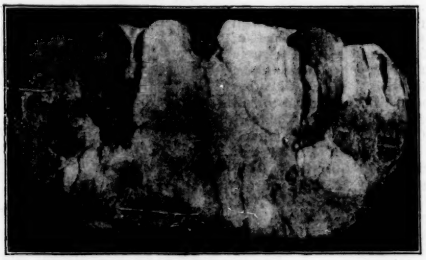
Chemical examination of the blood revealed, for each hundred cubic centimeters: sugar, 133 mg.; urea nitrogen, 17 mg.; preformed creatinin, 1.8 mg.

The specimen of the right kidney presented an oval tumor mass, 24 by 16 cm., having a slightly lobulated appearance.

1. Lecene, M. P.: Paranephritic Tumors, Tr. A. franç. de chir. **28**: 583, 1919.

On one surface the ureter and kidney pelvis were seen. The pelvis was about normal in size and shape, was not distorted, and the calices could be traced outward. The ureter was of normal size. Section through the mass showed it to possess a distinct capsule definitely outlined. The kidney was compressed anteroposteriorly, but there was no invasion or infiltration of the tumor into the kidney. Grossly, the capsule of the kidney appeared intact and the tumor mass completely surrounded it, except over the pelvis and ureter. The cortical portion of the kidney was distinct. The tumor proper was firm and of a dense white appearance, and in areas had a mucinous appearance. One area in the periphery, which was oval-shaped—10 by 6 cm.—was encapsulated, was softer than the remainder, and was of a gray, semitranslucent, mucinous appearance, with several cysts in it. The average diameter of the cysts was 1 cm. The cut surface of the tumor showed numerous interlacing fibers coursing throughout.

Microscopic examination of a section from the peripheral portion showed numerous fibroblasts, with hyperchromatic nuclei, few mitotic figures, and a great abundance of intercellular substance. A section from the encapsulated, grayish, translucent portion showed numerous spindle-shaped cells which varied in size, but on the whole were relatively large; also numerous round cells. The nuclei were hyperchromatic, the cytoplasm acidiphilic and nongranular. There were numerous mitotic figures in all phases. There was almost complete absence of intercellular substance. There were also myxomatous areas; the intercellular substance was not typically basophilic — probably myxomatous areas of degeneration. A section including the kidney and tumor showed some compression of the tubules, but no necroses or invasion. The kidney capsule was intact and distinct. Van Gieson's stains showed the cells to be of a fibroblastic nature. The diagnosis was: large spindle-cell fibroblastic sarcoma.



Tumor removed at operation.

COMMENT

Garceau,[2] in a complete review of the hospital records—necropsies and operations—for a period of ten years at both the Massachusetts General Hospital and the Boston City Hospital, found only one perirenal tumor—sarcoma. Gurlt,[3] in an analysis of 14,630 tumors at Vienna, found only one paranephritic tumor —sarcoma. Albarran and Imbert[4] compiled seventy-two cases from the literature during the period from 1862 to 1901; none were listed as personal cases by Albarran and Imbert. In 1897, Adami[5] compiled forty-two cases of retroperitoneal lipoma from the literature, classified in three groups: (1) definitely perirenal; (2) of doubtful origin; (3) arising from mesenteric fat. Recent data from the Mayo Clinic[6] are not available. Up to July, 1912, however, operation had been performed there in only eighty-three cases of malignant tumors of the kidney. No mention is made of perirenal neoplasms. Kidney tumors themselves are not as common as is generally supposed, but occur probably fifty times as frequently as paranephritic neoplasms.

Detwiler Building.

2. Garceau, Edgar: Tumors of the Kidney, New York, D. Appleton & Co., 1910.
3. Gurlt: Lancet **1**: 1275, 1909, quoted by Rolleston and Turner.
4. Albarran and Imbert: Renal Tumors, Paris, Masson & Cie, 1903.
5. Adami: Retroperitoneal and Perirenal Lipomata, Montreal M. J. **25**: 529 (Jan.) 1897; **25**: 620 (Feb.) 1897.
6. Braasch, W. F.: Clinical Data on Malignant Renal Tumors, J. A. M. A. **60**: 274 (Jan. 25) 1913.

Clinical Notes, Suggestions, and New Instruments

CEREBROSPINAL RHINORRHEA: REPORT OF CASE*

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Cerebrospinal rhinorrhea is a rare affection, characterized by the escape of cerebrospinal fluid into the nose.

REPORT OF CASE

A woman, aged 40, single, engaged in housework, was seen, Jan. 5, 1922, after she had been treated three months for sinusitis. She was complaining of a persistent dripping of clear fluid from the left nostril for the preceding three months. The family history was negative with the exception that obesity ran in the family. The patient had always been very stout; the present weight was 241 pounds (109 kg.); otherwise the past history was negative. There was no history of any head injury.

The present condition began, Oct. 23, 1921. After a very hearty laughing attack, followed by a severe sneezing, the patient was aware of a clear, limpid fluid from the left nostril; associated with this there was a severe frontal headache, which extended to the vertex. The headache had been constantly present, and diminished somewhat when the flow increased. At the time of examination there was a continuous dripping of clear, limpid fluid from the left nostril. The quantity for one hour was 1½ ounces (45 c.c.). The fluid was clear, odorless, tasteless and without sediment, and gave a slightly alkaline reaction. The flow had always come from the left nostril, with the exception that when I firmly packed the left naris, it then came from the right side just as freely. At first the fluid would make the patient's handkerchiefs stiff on drying, but this condition lasted only during the first week. At present there was no alteration in the color or consistency of the handkerchief; when it was dried it was very soft.

The flow of fluid was greatly altered or increased by the position of the head. When the head was inclined forward, there was a marked increase in the flow; when the head was in the upright position, dropping of the fluid was less; when the head was tilted backward the fluid ran down the postnasal space into the throat, and was swallowed; from the frequent elevation of the thyroid cartilage in the act of swallowing, it would lead one to believe that the flow was profuse; when she lay in bed with the head hanging over the edge, face downward, there was a drop of fluid every two seconds. During the sleeping hours the flow continued the same as in the daytime: so much so that it necessitated the patient's either lying on her face or turning her face to one side. In the morning the pillow case was completely inundated, soft and stainless. The constant swallowing of this fluid at times had caused severe diarrhea. An unusual occurrence in this case—if the patient's statement was correct, and I think it was, in view of her intelligence—was that on three occasions, as she stated, the fluid escaped from her left ear, coming out in gushes for a short time. This occurred before she came under my care.

The flow of fluid also was increased when the patient worked hard, climbed steps and did any severe exercise, or

* Read before the Section on Otology and Laryngology of the College of Physicians of Philadelphia, Dec. 20, 1922.

when she became angered and excited. The patient carefully measured the quantity of fluid during the waking hours on several days; it amounted to 32½ ounces (960 c.c.) a day.

The external nose was straight; there was slight excoriation, and there were a few fissures about the left vestibule and the upper lip. The mucous membrane was congested in the right nasal fossa and markedly so in the left. The middle and inferior conchae in both nasal fossae were slightly hypertrophied. The nasal septum was sharply deviated to the right, and had a spur at the base anteriorly on the same side which touched the center of the concha nasalis inferioris. There was no evidence of any pus in the nasal chambers or postnasal space. The postnasal space was slightly congested, with an area of redness about the eustachian orifices; otherwise it was normal. The tonsils were of average size and were normal. Transillumination of the frontal sinuses revealed that they were rather large. The left maxillary antrums were slightly cloudy; the right sinus was normal. In carefully examining the nose on repeated occasions, I was unable to determine definitely where this fluid made its exit, but I think that it came from the posterior portion of the roof of the nose and not from the middle meatus.

The tympanic membrane of the left ear was intact, and there was apparently no opening in the superior wall of the external auditory canal.

The fluid that escaped from the left naris was clear, colorless, and without a sediment. The specific gravity was 1.006. It contained 36 cells per cubic millimeter; this number is higher than normal for spinal fluid, but the majority of the cells were epithelial cells and presumably from the nasal mucosa. The fluid contained traces of albumin and of globulin; the total was about 0.03 per cent., which is exactly the amount found in normal spinal fluid. There was a trace of dextrose, the quantity appearing to be identical with that found in normal spinal fluid. The chlorids amounted to 7.26 per cent., exactly as found in normal spinal fluid. The colloidal gold test yielded a 0000000000 reaction, as in normal spinal fluid. The quantitative Wassermann reaction was negative with serum in amounts of 0.1, 0.02, 0.004, 0.002 and 0.001 c.c. With cholesterinized antigen, alcoholic extract of syphilitic liver and acetone insoluble lipoids used as antigens, it was negative.

The general results of this analysis showed that the fluid had practically the identical composition of normal cerebrospinal fluid, and Dr. John A. Kolmer, who examined it, regarded it as such.

The patient's eyes apparently never gave her any trouble, but when first seen I referred her to Dr. L. Webster Fox for ophthalmoscopic examination. There was no prominence of the eyeballs, and no nystagmus; the pupils were normal in size and contour; they reacted to light and accommodation normally; there was no photophobia or lacrimation, and no paralysis of the ocular muscles. Jan. 9, 1922, there was a slight optic neuritis or what might be called a fulness of the optic nerve in the left eye due to a probable blocking of one of the accessory sinuses. January 10, however, there was marked improvement in the optic nerve sheath. The visual field was markedly contracted, January 9 and 10. After that date and on February 21, the fields were not pronouncedly contracted as in the preceding examinations. The distal vision was not impaired.

A thorough neurologic and mental examination was made by Dr. D. J. McCarthy, who reported no evidence of organic disease of the brain, although he was of the opinion that the headaches were suggestive of a localized low grade meningitis.

My own observation of this patient was that she was extremely nervous and easily excited to fits of anger; at times she became very morose, and confined herself to her room for indefinite periods, making her appearance only at mealtimes; she refused to speak to any one; at times when she became angered, she went into a fit of temper and became apparently violent. At all times apparently she was very much depressed. On two occasions she made a verbal threat to commit suicide. Prior to the onset of her present condition, she was a very pleasant person, worked hard at home with houshold duties, was very handy making miniature dolls to represent world celebrities, and was extremely clever at embroidery. At present she refused to do any housework or cooking, and had lost her desire for doing any fancy work.

The roentgen-ray examination of the head and sinuses, made by Dr. Henry K. Pancoast, revealed the frontal sinuses negative; anterior ethmoid sinuses, clear; maxillary sinuses, clouded on the left side; septum, deviated to the right, the right side being entirely clear, and left side clear above; the lower turbinates filled the nasal cavity fairly well; sphenoid sinuses, clear; posterior ethmoid, clear; sella turcica, normal, there being some calcification in the frontal region, presumably of the meninges, over two small areas, which may not be of any significance.

The clear sphenoid and posterior ethmoid sinuses would seem to indicate that the cerebrospinal fluid did not come down in this region. The occlusion of the left side of the nose would suggest that the escape was more on that side. The significance of the clouded left antrum is uncertain.

Unfortunately, there was nothing that could be done in the way of treatment. It is not only useless, but it is harmful to check the flow of fluid. In many of the cases reported, when the flow ceased spontaneously or was checked, the patient became worse. The administration of drugs by mouth and local applications intranasally have proved useless. The latter form of treatment is positively contraindicated; such practice may cause encephalitis. Lumbar puncture has been tried and has proved unsuccessful.

The patient became so depressed that it was deemed advisable to send her to the hospital for a rest cure. After she had been in the hospital two and a half months, the flow of fluid from the left nostril entirely subsided; two weeks later she was suddenly taken with a chill, and a rise of temperature to 104, associated with numbness of the entire body and severe headache. Two days later she went into a semicomatose state with alternate periods of lucidity. The following day she developed a facial paralysis and tremors of the entire body. Two days later she developed auditory nerve deafness, and three weeks later died of acute encephalitis.

Medical Arts Building.

SUBSTERNAL THYROID WITH BILATERAL LARYNGEAL PARALYSIS *

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It is now generally recognized that, in cases of thyroid disease, paresis or paralysis of the vocal cords may occur previous to an operation on the thyroid gland.

Any laryngeal impairment that is caused by an enlargement of the thyroid gland is nearly always unilateral. When a bilateral involvement exists previous to operation, it is usually caused either by some lesion in the central nervous system, such as syphilis, or by a malignant disease of the thyroid gland.[1]

The case here reported presents a bilateral involvement of the vocal cords, without demonstrable lesion in the central nervous system and without evidence of malignancy in the thyroid gland.

REPORT OF CASE

History.—D. G., a woman, aged 50, born in Poland, came to the Manhattan Eye, Ear and Throat Hospital, clinic of Dr. McCullagh, Jan. 7, 1922, complaining of difficulty in breathing and of choking attacks. The family history had no bearing on the trouble, with the exception that the maternal grandmother had a goiter. The patient had had pneumonia three times. Otherwise she was in good health up to eight years ago, when the menopause began. Since that time she was very nervous, had palpitation of the heart on exertion, felt very weak, and lost considerable weight. A physician of the board of health thought that she had tuberculosis of the lungs, although the sputum was negative. She was sent to

* Read before the Section of Rhinology and Laryngology, New York Academy of Medicine, Jan. 24, 1923.

1. Crile, G. W., and Associates: The Thyroid Gland, Ed. 2, Philadelphia, W. B. Saunders Company, 1922, p. 58.

the Bedford Sanatorium, where she remained six months. There she had no cough, but lossed more weight, altogether about 35 pounds (16 kg.). From her usual weight of 125 pounds (56.7 kg.) she was reduced to 92 pounds (41 kg.). Dr. Alfred Meyer, who examined her at the sanatorium, was convinced that she had no tuberculosis, and he advised her to go home.

The difficulty in breathing and choking attacks began in the early part of 1920. A laryngologist thought that the trouble was due to nasal obstruction, and he performed a submucous resection of the nasal septum. As the symptoms became worse, she was advised to have the tonsils removed. She then came to the Manhattan Eye, Ear and Throat Hospital. Besides the dyspnea and the choking attacks, which appeared only after exertion, she also complained of frequent colds, profuse, watery, nasal discharge, and slight hoarseness for the last two months. She had similar attacks of hoarseness in the last few years.

Examination.—The patient was fairly well nourished; the weight was 150 pounds (68 kg.).)There was a fine tremor of the tongue and the outstretched fingers. The pulse rate was 120. The thyroid gland above the episternal notch was slightly enlarged, and the lower border of the gland could not be outlined. There was dulness on percussion over the upper part of the sternum. The left vocal cord did not move at all, and was shortened. The left arytenoid was fixed and tipped slightly forward. The right cord did not abduct, but in phonation approached the left cord. This explained the patient's fairly good voice. There was only a very small space between the vocal cords through which the patient was breathing. The left half of the larynx was completely paralyzed, and the right half presented a paralysis of abduction. Otherwise the general physical examination was practically negative.

On roentgen-ray examination, January 10, the trachea seemed to be in the median line, although there was a possible slight deviation to the left. There seemed to be a mass in the superior mediastinum which might be a thymus or a substernal thyroid. There was also some scoliosis from the second to the tenth dorsal vertebrae. After fluoroscopic examination, it was decided that the mass was a substernal thyroid.

The Wassermann reaction was negative.

Treatment.—The patient had four deep roentgen-ray treatments. These did not seem to do her any good subjectively. After each treatment she had to be in bed for three or four days on account of the extreme weakness, which followed the exposure to the rays. Her pulse rate and nervousness were not diminished. Objectively, the treatment seemed to have done some good, as shown by another roentgenogram, November 14. The mass seemed to be considerably diminished in size. The laryngeal picture, however, had not changed. She had no roentgen-ray treatments for about six months, as she was unwilling to have them. Since November 11, she has taken quinin hydrobromid, 5 grains (0.3 gm.), in capsules, three times a day. She now feels somewhat better, she is not so nervous, and the pulse rate is reduced to 98.

COMMENT

This case presents a difficult problem for proper management. I do not think that at this time an operation on the thyroid gland would do the patient any good. There is no case of complete paralysis of the vocal cords on record in which the patient recovered from the paralysis after operation on the thyroid gland. It is probable that the dyspnea which the patient suffers at times will become worse and more frequent on account of the very small breathing space between the vocal cords. It may then be necessary at any moment to do a tracheotomy. Until recently, no direct surgical attempts on the vocal cords have been made in such cases. Chevalier Jackson,[2] however, has performed ventriculocordectomy in a number of instances, operating by the direct laryngoscopic route. He believes that these patients regain a fairly good voice by the vicarious use of the false vocal cords. Crile,[1] in one of his cases, did a submucous resection of the vocal cords through a laryngofissure, preceded by a tracheotomy. It is probable that a similar operation will have to be performed on this patient; but so long as the patient is comfortable, I feel that no operative work ought to be done.

161 East Seventy-Ninth Street.

2. Jackson, Chevalier: Ventriculocordectomy: A New Operation for the Cure of Goitrous Paralytic Laryngeal Stenosis, Arch. Surg. 4: 257 (March) 1922.

A SECOND INITIAL LESION OF SYPHILIS ONE YEAR AFTER THE FIRST

WILLIAM C. NICHOLS, M.D., AND ARTHUR A. NICHOLS, M.D.,
FARGO, N. D.

Mr. J., aged 28, a traveling salesman, consulted a physician in a neighboring city, Nov. 10, 1921, for a small sore on the glans penis. He was told that it was a simple infected herpes, and was given a jar of a blue colored ointment to apply. The lesion healed in about ten days. Jan. 4, 1922, he consulted us with a florid maculopapular eruption which was generally distributed over the forehead, face, trunk and extremities, with several mucous patches on the tongue and inside of the cheek. As the rash was typical, and there had been the history of a lesion, we did not think it necessary to make a Wassermann test.

Intravenous injections of 0.9 gm. of neo-arsphenamin were given, January 4, February 5, 12, 19 and 26, March 26, and April 2, 9 and 16. The patient refused to take mercury intramuscularly so was given a 50 per cent. ointment for inunctions. During the entire course of his treatment, up to and including August 15, the patient used only 3 ounces of this preparation, and no other form of mercury. A Wassermann test, June 25, was negative with alcoholic antigen, and positive with cholesterinized antigen.

The patient was advised to continue the inunctions and was given six more injections of neo-arsphenamin, 0.9 gm., June 28 and July 1, 5, 8, 15 and 22. He was instructed to return for a Wassermann test, October 1, but failed to do so. He came, Feb. 4, 1923, complaining of a sore on the inner surface of the upper lip, which he had noticed for about three weeks. This had been painted a few times with silver nitrate by a dentist. Examination showed a typical indurated chancre with some healing around the edges. It was about the size of a penny, with a flat, ulcerating surface. Slides stained by the Giemsa method showed many spirochetes. The Wassermann test was 4 plus. He was given 0.6 gm. of arsphenamin, February 11, and when he returned for the second treatment a week later, the sore had entirely disappeared.

This case is interesting in view of the fact that the patient was irregular in receiving the arsphenamin injections, and was very lax with the mercury inunctions, not only as to time, but also as to the quantity used throughout the period of treatment.

608 Front Street.

TRAUMATIC ASPHYXIA

A. H. TRAVER, M.D., ALBANY, N. Y.

C. V. M., aged 47, a farmer, who had always been in good health, was driving his automobile, weighing about 3,000 pounds, over a farm road, Aug. 7, 1922, when the car skidded and went over a bank of about 8 feet. The car tipped entirely over, resting on top of its body, with the wheels in the air. The patient was caught under the overturned car, his back on the ground and the top of the body of the car resting on the lower part of his chest. It was about twenty minutes before the car was jacked up and the patient taken out. The men who saw him thought he was dead, as his face was black. He was able to speak, and seemed conscious, but could not see. He was taken to his home, and I was called. I reached his home at 5:30 p. m., about thirty minutes after the accident.

The face and neck were black. The eyes were protruding. The conjunctiva was bulging from between the lids. Subconjunctival hemorrhages were present. He was blind, not

being able to see an electric light flashed before his eyes. He was conscious. His clothes were covered with blood, apparently from the nose. The pulse could not be felt at the wrist, and the heart beats could be barely heard with the stethoscope. Morphin, strychnin and nitroglycerin were given. In about an hour the patient had improved so that it was thought safe to move him to the hospital. When he entered the hospital, the nurses thought he was a colored man. He vomited, but there was no blood in the vomitus. The urine showed no blood. During the night the abdomen became much distended; this condition was relieved by an enema. In the morning his color was the same, and the eyes were still bulging. He could see light, but was unable to recognize any one. The pulse was 110, the temperature, 99. Dr. A. J. Bedell, who examined the eyes, said that the hemorrhage was not in the eyes, and thought that the blindness was caused by the pressure of the blood on the nerve. The patient rapidly improved; August 14, the pulse was good, and the heart sounds were strong. The discoloration of the skin was less marked. He was now more the color of an Indian. The eyes were still red. He could recognize people, but could not see to read. Roentgen-ray examination showed fracture of the left transverse processes of the seventh, eighth and ninth dorsal vertebrae. The patient was taken home in an ambulance ten days after the accident. October 15, the patient said that he felt well; he had some pain in the hip. He could see fairly well with one eye, but the other was still blurred. Dr. Bedell's reports on the eyes were that at the first examination, August 8, there was marked congestion, with extreme subconjunctival hemorrhages which surrounded the cornea; the pupil reacted normally to light and accommodation; the media were clear. When last seen, November 2, the vision of the right eye was 20/15; the fundus was clear. Vision of the left eye was 10/200; the disk was white; there was a slight change in both veins and arteries. The field of vision showed decided contraction, and in the left eye there was a small central scotoma.

Little is said about this condition in the various textbooks, and different reasons are given for the symptoms.

27 Eagle Street.

Treatment of Pneumonia.—DR. HENRY F. STOLL, Hartford, Conn., writes: Don't think of pneumonia solely as a disease of the lungs. Heart failure is responsible for many fatalities. At the first examination and at each succeeding visit, note the position of the apex beat and observe the quality of the heart sounds; this can be done without disturbing the patient, and may enable one to detect the first signs of a failing myocardium or the beginning of pericarditis. Don't make a complete examination of the lungs every day unless you suspect pus; it exhausts the patient. Never direct a patient to "sit up" or to "roll over" if very ill, to examine his back; he may be turned on his side with little discomfort if it is done by reaching across the patient, placing one hand under the further shoulder, the other under the pelvis, and gently and slowly turning him toward you. Whenever there is a suspicion of diminished myocardial reserve, small doses of digitalis should be begun from the onset. Don't forget that an increase in restlessness and in the respiratory rate may be due to a distended bladder, and that many cases of incontinence can be cured by a catheter. Save in the very feeble, cold, fresh air is desirable—but be sure that you have a warm patient. When serum (Type 1) is indicated, its curative effects are directly proportionate to the promptness of its administration. Quiet and sleep are absolutely essential, and the elimination of unnecessary exertion may be life-saving.

Preventive Neuropsychiatry.—One of the greatest opportunities for neuropsychiatry lies in the field of increasing interest in the study of persons who as yet have not developed actual psychoses, but who are on their way; and prevention here, as in many other fields, should constitute a more than laudable ambition.—William House, *California State J. M.* **21**:29 (Jan.) 1923.

New and Nonofficial Remedies

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR ADMISSION TO NEW AND NONOFFICIAL REMEDIES. A COPY OF THE RULES ON WHICH THE COUNCIL BASES ITS ACTION WILL BE SENT ON APPLICATION. W. A. PUCKNER, SECRETARY.

MERCUROSAL.— Disodiumhydroxymercurisalicyloxyacetate.—$(HOHg).NaOOC.C_6H_3.OCH_2COONa$. Mercurosal contains from 43.0 to 43.8 per cent. of mercury in organic combination.

Actions and Uses.—It is claimed that mercurosal is relatively free from irritant action, that it is eliminated without untoward effect on the kidney and that its toxicity is relatively lower than mercuric chloride and mercuric salicylate. Mercurosal is intended for the mercurial treatment of syphilis. It is administered either intramuscularly or intravenously. The Council accepted mercurosal as a comparatively non-toxic, comparatively non-irritating mercury salt which does not precipitate protein.

Dosage.—The usual intramuscular dose is 0.05 Gm. dissolved in 2 Cc. of sterile water every fourth or fifth day for ten or twelve doses. The usual intravenous dose is 0.1 Gm. dissolved in 5 Cc. of sterile water administered every second or third day for ten or twelve doses.

Manufactured by Parke, Davis and Co., Detroit, Mich. U. S. patent applied for; U. S. trademark No. 161254.

Mercurosal B *1 (Intravenous).* Sealed tubes containing mercurosal 0.1 Gm.

Mercurosal B *2 (Intramuscular).* Sealed tubes containing mercurosal 0.05 Gm.

Mercurosal is a white, amorphous powder. It is soluble in about 10 parts of water, insoluble in the usual organic solvents. Dilute aqueous solutions of mercurosal are quite stable when protected from air, but on prolonged standing may give rise to an insoluble compound. Mercurosal is decomposed by acids, strong reducing agents; salts of heavy metals, such as silver or lead, yield insoluble precipitates. From a 1 to 2 per cent. aqueous solution of mercurosal, calcium chloride precipitates a calcium salt which dissolves on subsequent dilution with water.

Mercurosal is faintly alkaline to phenolphthalein solution. When an aqueous solution of mercurosal is treated with an alkali hydroxide, a clear solution results. No precipitate is produced when an aqueous solution of mercurosal is saturated with carbon dioxide. When an aqueous solution of mercurosal is acidified with acetic acid or with mineral acids, a white precipitate is produced.

Heat mercurosal, 1 Gm., with hydrochloric acid (1: 1), 25 Cc. until decomposition has taken place, cool and collect the precipitate; dissolve the precipitate in alkali, filter, reprecipitate, and crystallize from water; these crystals melt at 192 C (*salicylacetic acid*). Treat an aqueous solution of mercurosal with iodine solution, acidify with hydrochloric acid and collect the precipitate; after drying, the precipitate melts at 217 C. Saturate an aqueous solution of mercurosal with hydrogen sulphide; no presipitate is produced (*absence of "inorganic" mercury*).

Dry mercurosal at 100 C. for one hour; the loss does not exceed 1 per cent. Dissolve about 0.4 Gm. of dried mercurosal, accurately weighed, in water 5 Cc.; add concentrated hydrochloric acid, 5 Cc.; cover the beaker and digest on a steam bath until solution takes place; dilute to from 100 to 125 Cc. with water and saturate with hydrogen sulphide; collect the precipitate in a tared gooch crucible; wash successively with water, alcohol and ether; dry to constant weight at 100 C.; the weight of mercuric sulphide corresponds to from 43 to 43.8 per cent. of mercury.

A physiologic test is made which shows the comparative shock which is caused by large doses of 2 per cent. solution when given intravenously. The immediate lethal dose per kilogram body weight of rabbit, practically identical with the dose causing shock of this animal, is determined by a series of experiments with a 2 per cent. solution of each lot of mercurosal. Carefully selected rabbits weighing from 2 to 4 kg. are injected intravenously. Death must take place in from 7 to 15 minutes. The average dose of mercurosal immediately lethal and causing shock is 0.025 gram per kilogram of body weight.

PNEUMOCOCCUS ANTIBODY SOLUTION, TYPES I, II AND III COMBINED.—An aqueous solution of specific pneumococcus antibodies, Types I, II and III in equal proportions, approximately free from the proteins of horse serum. The vaccine is prepared by adding to the serum from horses immunized by repeated injections of pneumococci, Types I, II and III, a heavy emulsion of equal proportions of pneumococci, Types I, II and III. The mixture is heated to kill the germs, centrifuged and washed with salt solution to rid it from horse serum. The washed sediment is emulsified in physiological solution of sodium chloride containing 0.25 per

cent. of sodium bicarbonate and then heated at 55 C. for from thirty minutes to one hour to cause dissociation of the antigen and the antibody. The mixture is centrifuged; the supernatant liquid removed, chilled, recentrifuged and filtered through a filter candle. The final product contains 0.035 Mg. of nitrogen per cubic centimeter.

Actions and Uses.—There is some evidence that this antibody solution is of value in the treatment of lobar pneumonia.

H. K. Mulford Company, Philadelphia.

Pneumococcus Antibody Solution, Types I, II and III Combined-Mulford.—Marketed in packages (*M 48-010*) of one 50 Cc. double-ended vials with one complete intravenous outfit, and in packages (*M 48-160*) of one 50 Cc. double-ended vials.

Special Article

THE CARE AND FEEDING OF INFANTS

(Continued from page 773)

[NOTE.—This is the twelfth of a series of articles on the care and feeding of infants. It is addressed to the general practitioner rather than to the pediatric specialist. When completed, the series, somewhat elaborated, will be reprinted in book form.—ED.]

WHOLE MILK DILUTIONS WITH CARBOHYDRATE ADDITIONS

In applying the rules for the feeding of normal, healthy infants it must be remembered, as previously emphasized, that each infant must be fed to meet its individual requirements. Therefore the rules must be so modified as to meet the individual demands. If milk dilutions with the addition of carbohydrates are used, the simplest and most natural standard is that which tells us how much milk and carbohydrates the baby should get per pound or per kilogram of body weight.

To be exact, we should express, or at least be aware of, the number of grams of proteins, fat, carbohydrates, salts and water that the infant is receiving for each pound of its body weight.

If statistics on infant feeding were collected on this basis rather than on percentages of the ingredients in the milk mixtures (the total mixtures used by different physicians being of such variable quantity), the collected data would be far more valuable as a basis for future work in infant feeding.

In every instance the general health of the infant is of the greatest importance in estimating its capacity for assimilating the diet.

To meet the minimal per pound body weight protein (1.5 gm.), fat (1.8 gm.), and calcium oxid (0.08 gm.) requirements, the average normal infant will require each day a minimum of 1½ ounces (45 c.c.) of cow's milk. For each kilogram of body weight, 3.5 gm. of protein and 4.0 gm. of fat will be required. These will be furnished by 100 c.c. of cow's milk.

For normal full weight infants, the addition of one-tenth ounce (3 gm.) by weight of sugar to the milk mixtures will be required for each pound of body weight (6.6 gm. per kilogram).

Water equal to 3 ounces per pound, or one-fifth the body weight, will meet the day's requirements for young infants, and amounts approximating 2½ ounces per pound, or one-sixth the body weight, will answer for older infants. The difference between the total day's fluid requirement and the milk in the mixture can be added as boiled water or cereal water or a portion of it may be fed between meals.

Cereals in the form of thin gruels may be added to the milk mixtures in quantities varying from one-sixtieth to one-thirtieth ounce (0.5 to 1 gm.) for each pound of the body weight after the first or second month of life.

A mixture formulated to include these recommended amounts of food ingredients will average about 45 calories for each pound of body weight (Table 19).

Practical clinical experience has taught us that infants fed on cow's milk mixtures will frequently require approximately 2 ounces (60 c.c.) of cow's milk per pound of body weight, except during the first few weeks of life, when smaller quantities of whole or skim milk are indicated. Such mixtures will average approximately 55 calories for each pound of body weight.

In beginning feeding with cow's milk, mixtures must always be started as weak formulas, more often only 1 ounce (30 c.c.) of cow's milk being used to a pound of body weight, the strength being gradually increased to meet the infant's needs.

Underweight infants should be fed according to their weight at the initiation of feeding, the strength of the mixture being increased gradually but rapidly as the baby shows ability to handle the food, thus approximating the needs of a full-weight baby of the same age, in milk, sugar and water. These babies will frequently, therefore, require 2 ounces (60. c.c.) or more of milk per pound of body weight, and carbohydrates must added in proportion.

TABLE 19.—MIXTURE CONTAINING RECOMMENDED AMOUNTS OF FOOD INGREDIENTS

Milk, 1½	ounces =	30 calories
Sugar, 1/10	ounce =	12 calories
Starch, 1/30	ounce =	3 calories
		45

With the institution of a mixed diet, the infant thrives with less milk per pound of body weight.

In preparing to feed an infant these general rules should be followed:

The baby should be weighed, and one should determine whether or not its weight is within normal limits.

The amount of cow's milk necessary in the preparation of the mixture should be determined. One and a half ounces of cow's milk per pound of normal body weight at the baby's age is a safe minimum for a healthy infant. It should be remembered that normal infants may require as much as 2 ounces per pound of body weight.

The total daily quantity of water required should be determined, 3 ounces per pound (one-fifth the body weight) during the first six months and somewhat less, 2½ ounces per pound (one-sixth the body weight) after this period. Sufficient water (or cereal water) should be added to the milk to bring the total quantity of mixture up to the day's requirements in fluids.

Three grams of sugar, and later an additional 0.5 to 1 gram of starch should be added for each pound of body weight.

The curd should be made more digestible either by boiling, adding cereal water, or alkalizing the mixture.

MIXTURES ESTIMATED ON THE BASIS OF CALORIC REQUIREMENTS

The caloric needs of infants can be made the basis for formulating the constituents of their diet.

The protein, fat, salts and carbohydrates must be so combined as to meet the infant's needs in each of these elements.

Forty-five calories per pound, or 100 per kilogram, may be considered as meeting the minimal daily requirement of the average normal infant. Thin infants will require from 50 to 70 calories per pound (110 to 150 per kilogram).

The protein content should be supplied first; next the needs in fat, and last the carbohydrates.

Protein.—The normal infant will require a *minimum* of 1.5 gm., which provides 6 calories per pound; this is furnished by the protein contained in 1½ ounces of cow's milk. Per kilogram, 3.5 gm. provide 14.3 calories, furnished by 100 c.c. of milk.

Fat.—The needs in fat, 1.8 gm., or 16.5 calories, per pound, will, for most infants, be provided for by 1½ ounces of milk. Per kilogram, 4 gm., which provides 37.2 calories, will be furnished by 100 c.c. of milk.

TABLE 20.—AMOUNTS REQUIRED FOR AN INFANT WEIGHING TEN POUNDS

	Ounces	Calories
Milk	15	315
Sugar	1⅛	135
Water	15	...
Total		450

TABLE 21.—AMOUNTS REQUIRED FOR AN INFANT WEIGHING FIVE KILOGRAMS

	Gm. or C.c.	Calories
Milk	500	350
Sugar	37.5	150
Water	500	...
Total		500

Carbohydrates.—The sugar required in excess of the 2 gm. (8.2 calories) provided by the milk, when 1½ ounces is fed per pound, will amount to 3 gm., or one-tenth ounce, for each pound of body weight. This will furnish 12.3 calories, or a total of 20.5 calories inclusive of the sugar in the milk. Per kilogram, 6.6 gm. of sugar must be added to the 4.5 gm. that is contained in 100 c.c. of milk. The infant will therefore receive 11 gm. of sugar per kilogram, which provides 45.5 calories. Therefore, in feeding 1½ ounces of milk, plus one-tenth ounce of sugar, the following calories will be provided: protein, 6; fat, 16.5, and sugar, 20.5, or a total of approximately 43 calories for each pound of body weight. This requires considerable calculation in estimating the proper proportion of the ingredients and even more so if a second carbohydrate as starch is added.

In feeding 100 c.c. of milk [41] with 6.6 gm. of sugar added, the infant will receive, for each kilogram: protein, 14.3 calories; fat, 37.2, and carbohydrates, 45.5, a total of 97 calories. We will therefore make use of the enumerated facts for calculating the initial diet of a normal infant as follows: An infant weighing 10 pounds will require 15 ounces of milk. Calculating his caloric needs at 45 per pound, his diet should contain a total of 450 calories. Of this 315 calories will be furnished by his milk. The remaining 135 are to be supplied by carbohydrates, sugar or sugar and starch. If sugar is used, 1⅛ ounces will be required. Estimating 3 ounces of total fluids per pound of body weight, 15 ounces of water will be added as a diluent. The total formula will therefore be constituted as in Table 20.

If estimated by the metric system, an infant weighing 5 kg. requires 500 calories, and should receive the amounts given in Table 21.

While in the case of average normal full-weight infants this method of calculating the diet works out satisfactorily, when underweight infants are to be fed, the estimation of needed ingredients is less simple. It becomes even more complicated when cereals and other foods are added to the diet.

This method is also more complicated than the one previously recommended for analyzing diets that infants are taking. In comparing the two methods of estimating the needed ingredients for the infant's diet, the first is based on the amounts of each of the ingredients needed, and the second on the calories required.

It is to be remembered that the quantities recommended under the heading Milk Dilutions with Added Carbohydrates, in the amounts suggested as minimums, furnish approximately 45 calories per pound, or 100 per kilogram, of body weight—the proportions needed by the infant. In the feeding of underweight infants, the amounts ultimately needed are calculated on the basis of the estimated weight of the normal infant of the same age and development.

UNDILUTED WHOLE MILK WITH CARBOHYDRATES

While undiluted milk has been used with varying degrees of success by some of the continental pediatricians, on the whole it is not well borne before the fourth month of life. When undiluted whole milk is to be fed to a young infant, it should first be boiled in order to change the protein so that it will be precipitated in the infant's stomach as a fine curd. Alkalizing the milk by the addition of sodium citrate or sodium bicarbonate also results in the formation of fine curds. If undiluted milk is used in the feeding of the very young infant, the size of the individual meal must of necessity be reduced under that recommended for diluted mixtures, or fewer meals must be given. Otherwise the caloric requirements of the infant will be exceeded. Water must be administered between feedings to meet the infant's needs for fluids.

While, as a routine measure of feeding, undiluted whole milk cannot be recommended, in some forms of vomiting and when gastric dilatation is present, small quantities of a concentrated food can often be fed to better advantage than larger quantities of milk dilutions. When carbohydrates are added, they should be in such amounts as are indicated by the infant's weight and age.

TOP-MILK DILUTIONS

By this method a definite number of ounces of the upper part of milk which has stood for a number of hours is used as a basis for preparing the mixture.

TABLE 22.—FAT PERCENTAGES

	Per Cent.
Upper 16 ounces	7
Upper 20 ounces	6
Upper 24 ounces	5

To carry out top-milk feeding successfully, the percentages of fat must be known which occur at various levels in 32 ounces (1 quart) of milk (containing 4 per cent. of fat) which has stood for six hours or longer.

41. Milk calculated as containing percentages as follows: protein, 3.5; fat, 4; sugar, 4.5.

This method endeavors to provide ample calories, and in this respect may be considered as successful. The chief advantages are that high fat and low casein mixtures can easily be prepared by the use of various dilutions of different layers of top-milk. With these mixtures there is the danger of feeding dilutions containing an excess of fat, not uncommonly reaching 5 or 6 per cent. when the upper layers are used. Such high fat mixtures not uncommonly result in fat indigestion. The early advocates of this method recommended it on the basis of the low protein content of the mixture, believing that a high casein content frequently caused acute intestinal disturbances. In the light of our present knowledge, however, we know that the casein of milk boiled or alkalized, or mechanically divided by the addition of cereals, is easily digested and causes nutritional disturbances only in exceptional cases. Owing to the tendency to use high dilutions, the sugar and salt content, more especially the latter, may be insufficient. This method of feeding has many advocates, and has given good results when its shortcomings are recognized and the diets properly balanced.

It will be of advantage to use the upper 16 ounces of the quart of milk (which will have a content of 7 per cent. fat and 3.5 per cent. protein), in feeding certain selected infants who are not making satisfactory progress on the whole milk dilutions. When desirable, the 7 per cent. top-milk may be used in the mixture in amounts of 1½ ounces per pound, or 100 c.c. per kilogram, as an alternative for whole milk. Such mixtures will average about 3 gm. of fat per pound, or 6.6 gm. per kilogram of body weight.

While this amount of fat is in excess of the amount needed, only in exceptional cases will a healthy infant be upset by it.

High fat mixtures are contraindicated in most infants with disturbed digestion, except those in which it is due to carbohydrate intolerance or protein sensitization. In these instances the fat will often replace, in part at least, the insufficiency of carbohydrate and protein.

CREAM AND SKIMMED MILK MIXTURES

By the use of 16 per cent. cream and skimmed milk as the basis for various milk modifications, a wide range of combinations of the various food elements may be obtained. By the use of cream and skimmed milk, an additional factor is added for calculating the percentage content of the dilutions. *This is, however, not a great objection. The fact should be recognized that most physicians think of mixtures in terms of percentages without recognizing the possibility that one set of infants may receive large quantities of these dilutions in their day's feedings, while another group, under different care, may receive much smaller quantities and fewer feedings of the same quality of mixture.* If we accustom ourselves to think of the number of grams of fat, protein, carbohydrate and salts per kilogram or pound of body weight, it will in all probability offer the greatest possibilities of all the methods so far advocated.

For feeding purposes, gravity cream (of which about 6 ounces or somewhat less may be obtained from a quart of a good quality of milk) contains fat, 16; protein, 3.5, and carbohydrate, 4.5 per cent. The skimmed milk may be obtained by carefully pouring or dipping off the cream. It should contain fat, 0; protein, 3.5, and carbohydrate, 4.5 per cent.

The average infant should receive: fat, from 1.5 to 2 gm.; protein, 1.5 gm., and as a minimum of added carbohydrate, 3 gm. (above that contained in the cream and skimmed milk), per pound of body weight. These will be obtained by the use of cream (16 per cent.), skimmed milk and sugar, the contents of which are given in Table 23.

TABLE 23.—CONTENTS OF CREAM, SKIMMED MILK AND SUGAR

Cream (16 per cent. fat)	in 1 oz.	5 gm.	fat
Skimmed milk (3.5 per cent. protein)	in 1 oz.	1 gm.	protein
Sugar (100 per cent. carbohydrate)	in 1 oz.	30 gm.	carbohydrate

The amounts needed are given in Table 24.

TABLE 24.—AMOUNTS NEEDED

For each gram of fat	3/10 oz., or	6 c.c.	of cream
For each gram of protein	1 oz., or	30 c.c.	of skimmed milk
For each gram of carbohydrate	1/30 oz., or	1 gm.	of sugar

In the mixture, the ingredients will be used in the amounts, *per pound of body weight,* given in Table 25.

TABLE 25.—AMOUNTS FOR EACH POUND OF BODY WEIGHT

Cream	3/10 to 4/10 oz. (fat, from 1.5 to 2 gm.)
Skimmed milk	1½ oz. (protein, 1.5 gm.)
Sugar	1/10 oz. (carbohydrate, 3 gm.)

In the mixture, the ingredients will be combined in the amounts, *per kilogram of body weight,* given in Table 26.

TABLE 26.—AMOUNTS FOR EACH KILOGRAM OF BODY WEIGHT

Cream	20-27 c.c. (fat, from 3.3 to 4.4 gm.)
Skimmed milk	100 c.c. (protein, 3.5 gm.)
Sugar	6.6 gm. (carbohydrates, 6.6 gm.)

In underweight infants, the amounts would be calculated on the basis of initial weight at the beginning of feeding, but these would be increased gradually to the amounts necessary for a normal weight infant of the same age.

Example: It is desired to feed a 10-pound baby, fat, 20 gm.; protein, 15 gm., and carbohydrate, 30 gm., the amount required for one day's food. These quantities would be supplied by cream, 4 ounces; skimmed milk, 15 ounces; sugar, 1 ounce, and water, 11 ounces, bringing the total fluid to 3 ounces for each pound. The small excess of protein in the cream may be considered negligible.

It will be noted that by considering the needs of the infant in terms of weight and forgetting the percentage content of the variable mixture, the danger of error is removed and the variation due to the individual physician is done away with. At the same time this method of feeding becomes much simplified and retains all of its flexibility.

There can be no doubt as to the accuracy of the modifications that can be obtained by this method of feeding. It has the disadvantage of requiring more calculation. In actual experience, the disadvantage to healthy infants of a possible relative excess of protein in mixtures made with simple dilutions of whole milk has been exaggerated. Practical experience presents convincing evidence that far more infants develop gastro-intestinal disturbance from feeding excessively rich cream mixtures. The greatest objection to high milk feeding is the resultant high protein constipated stool, which can be obviated by adding more sugar.

(To be continued)

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SATURDAY, MARCH 24, 1923

DIET DEFICIENCIES AND IMMUNITY

Although the existence of deficiency diseases has become well established in recent years and has been exemplified with scientific precision in the case of at least scurvy and beriberi, the precise processes whereby the characteristic pathologic conditions arise are far from being solved. The instances mentioned represent clinically recognized maladies. It is more than likely, however, that less well defined symptoms have thus far escaped detection in the syndrome of effects attributable to faulty nutrition. The physiologists have demonstrated that when the diet is deprived partially or completely of an essential constituent, animals under experiment soon manifest the deficiency by a retarded rate or cessation of growth, by restricted propagation and by a general unhealthy appearance, so that if some indispensable food factor is withheld for a prolonged period, organic changes of a marked character may ensue.

It is quite possible, as Zilva [1] has specially emphasized, that, besides the more radical changes produced by deficient nutrition, decided modifications may take place in the body tissues and fluids which are not discernible macroscopically or microscopically, but which may nevertheless restrict physiologically the functions of the organism. In this connection arises the interesting problem whether the resistance to disease of the animal is in any way influenced by deficient nutrition. Zilva reminds us of the widespread belief that underfed persons are more susceptible to infection than well fed persons, and that when the former contract a disease they show less resistance and are more prone to succumb to it. But, he adds, terms like "malnutrition" or "underfed" are vague expressions and lack scientific definition. There is also no definite scientific evidence, even of a general character, to support this belief, in spite of its probability. If, however, there is a connection between imperfect nutrition and susceptibility to disease, Zilva maintains that the subject becomes one of the utmost theoretical and practical importance.

When Zilva examined the possible effects of a series of diets, each of which was specifically deficient, no inequalities in the content of the agglutinins and amboceptors in the blood could be recorded in most cases. Thus, guinea-pigs fed on an unrestricted mixed diet, quantitatively restricted mixed diet and a scorbutic diet, respectively, showed no differentiation in the amboceptor and agglutinin titers, and in the complement activity of the blood. And now these studies at the Lister Institute in London have been supplemented by the investigations of Findlay and Mackenzie [2] at the Royal College of Physicians' Laboratory in Edinburgh. They failed to find any decrease in the opsonic activity of the blood serum in animals receiving diets evidently deficient in respect to vitamins A, B or C. Furthermore, there was no evidence to suggest any decrease in the phagocytic activity of the polymorphonuclear leukocytes as the result of a diet deficient in vitamin C. These results harmonize with the contention of Bordet and others that the phagocytic power of the body appears, after all, to be a relatively stable function, and one not easily influenced by conditions that profoundly affect other vital activities.

THE TEST OF HYPERTHYROIDISM

The limitations of the so-called Goetsch test as an index of hyperthyroidism have already been pointed out in THE JOURNAL.[3] This reaction consists in the response of patients to subcutaneous injections of small doses of epinephrin, a positive result being manifested by an increase in pulse rate and rise of blood pressure, exaggeration of tremor, palpitation and nervousness, appearing within a short time after the injection. The epinephrin was at first believed to produce sensitization of the organism so that a synergistic action of the thyroid secretion would manifest itself by pressor effects. Although Goetsch originally thought that the phenomenon might be of value in the diagnosis of thyroid disease by allowing a surplus output of thyroid hormone to manifest itself more readily, he later pointed out that the reaction, after all, is indicative only of alterations in the sympathetic system; that is, it becomes an index of sympathetic overstimulation.

In recent studies at the Department of Pharmacology at Columbia University, Lieb and Hyman [4] have demonstrated anew that the reaction to epinephrin measured in the response of blood pressure varies

1. Zilva, S. S.: The Influence of Deficient Nutrition on the Production of Agglutinins, Complement and Amboceptor, Biochem. J. **13**: 172 (July) 1919.

2. Findlay, G. M., and Mackenzie, R.: Opsonins and Diets Deficient in Vitamins, Biochem. J. **16**: 574, 1922.

3. The Goetsch Test in Healthy Persons, editorial, J. A. M. A. **79**: 136 (July 8) 1922.

4. Lieb, C. C., and Hyman, H. T.: Studies of Graves' Syndrome and the Involuntary Nervous System, IV, The Vascular Response of the Pithed Cat to Single Intravenous Injections of Adrenalin, Am. J. Physiol. **63**: 60 (Dec.) 1922; V, The Vascular Responses of the Pithed Cat to Repeated Intravenous Injections of Equal Doses of Adrenalin, ibid., p. 68; VI, Attempts to Alter the Vascular Response of the Pithed Cat to Repeated Injections of Similar Doses of Adrenalin, ibid., p. 83; VII, On the Mechanism of Sensitization to Subcutaneous Injections of Adrenalin, ibid., p. 88.

widely with the condition of the subject. This is contrary to the widespread belief that the circulatory system will respond with the accuracy of a chemical balance to any dose of epinephrin.[5] These studies point to the frequency of "variables" in the involuntary nervous system not due to sensitization. They are frequently present when evidences of "tire" are present, and are definitely not associated with hypertonicity of the portion of the nervous system referred to.

Of foremost importance is the observation that the apparent "sensitization" by epinephrin may develop or persist even in the complete absence of thyroid glands. This fact at once indicates that the reaction is due to alterations in the peripheral structures of the involuntary nervous system rather than to changes in the thyroid. The demonstration that the involuntary nervous system is not a "constant" in its responses, and that the variations need not be due to sensitization by some artificially introduced variables such as the thyroid hormone, removes a fundamental postulate of the Goetsch test. It also jeopardizes the validity of the theory which holds that exophthalmic goiter is due to a synergism between the suprarenal medulla and the thyroid gland. As usual, the conflict of opinion is with theories of pathogenesis, not with the facts of direct observation.

THE BACTERIAL ACTION OF ULTRAVIOLET LIGHT

It has long been appreciated that light has potencies for good or harm, but it is only in comparatively recent times that the details of its effects have begun to receive serious scientific consideration. This awakening of interest has been due in part to the growing knowledge of various manifestations of radiant energy, and their application in various fields of human experience. A recent reviewer[6] has remarked that although the physiologic effect of sunlight seems at first sight indefinite and of dubious importance, the action of far ultraviolet light on normal tissue, and the action of near ultraviolet and visible light under certain pathologic conditions, has been investigated enough to show that there are well-defined effects due to light, closely related to the physiologic results of exposure to radium and the roentgen rays. These results, she adds, are gradually assuming considerable importance in clinical medicine, and present theoretically an interesting but illusive problem in physiology.

Nearly half a century has elapsed since Downes and Blunt, in 1877, showed for the first time that sunlight retards the growth of bacteria, and proved that this was not due to heat, since the same result was obtained with tubes cooled in ice. Much emphasis has been placed, in a popular way, on the bactericidal action of light.

In their natural environment, micro-organisms may be temporarily but are not usually exposed to ordinary light. Some of them will at best only occasionally come into contact with the direct rays of the sun; for this reason it becomes all the more desirable to learn how these living forms react to the various sorts of artificial irradiation to which they can be exposed at the will of the observer. A recent investigation by Bayne-Jones and Van der Lingen[7] at the Johns Hopkins University indicates that the bactericidal action of light is confined to the ultraviolet region of the spectrum. An increase in hydrogen-ion concentration of the fluids in which the micro-organisms were suspended during their exposure to irradiation with ultraviolet rays increased the velocity of the bactericidal action. However, neither temperature nor the hydrogen-ion concentration rendered bacteria sensitive to the longer wave-lengths of light. As the invisible roentgen rays and radium rays are known to destroy living tissues by long exposures, micro-organisms cannot be considered less resistant, although the bactericidal effect of such short rays as radium affords is still somewhat debated. The next step will be to learn more precisely to what degree and how ultraviolet irradiation may be employed to replace chemical antiseptics.

THE CARDIAC FEATURES OF VOMITING

A student beginning the study of medicine must marvel at the lack of knowledge that still attaches to some of the most common experiences in the routine of the physician. Vomiting affords an illustration in this connection. The symptoms have been known since physical manifestations were made the subject of medical observation; and emetics are among the oldest drugs to be employed by the physician. Although nausea and vomiting can be produced without any immediate contact of the emetic agent with the alimentary tract, physiologists have been slow to admit that the latter plays no part in the reception of the stimuli which bring about the act. It has been assumed, for example, that when substances taken in some way other than orally produce vomiting they do so by being excreted into the alimentary canal, and thus in ultimate analysis really act by producing local irritation there. Only in comparatively recent years has the existence of a true vomiting center in the neighborhood of the respiratory center of the medulla been more generally accepted.

The stimulation of the medullary center either directly or reflexly leads to nausea and vomiting.[8] Apomorphin stimulates it directly, and consequently brings about emesis even after subcutaneous dosage. It is widely supposed that the substances which act

5. Elliott: J. Physiol. 44: 374, 1912.
6. Clark, Janet H.: The Physiological Action of Light, Physiol. Rev. 2: 277 (April) 1922.
7. Bayne-Jones, S., and Van der Lingen, J. S.: The Bactericidal Action of Ultraviolet Light, Bull. Johns Hopkins Hosp. 34: 11 (Jan.) 1923.
8. A good outline of the subject will be found in Hatcher, R. A., and Wilbert, M. I.: Pharmacology of Useful Drugs, Chicago, American Medical Association, 1915, p. 308.

reflexly to produce vomiting do so by irritating the alimentary mucosa. This is, of course, one of the ways in which emesis results. But Hatcher and Weiss [9] have shown that intravenous injection of digitalis preparations produces vomiting in animals even when the entire gastro-enteric tract has been removed, but that the drug does not act emetically like apomorphin when applied directly to the vomiting center. Digitalis substances, therefore, do not exert their emetic action by direct stimulation of the center or through gastro-intestinal irritation, but reflexly by the stimulation of sensory fibers in the heart. Severance of all nervous connections between the heart and the medulla stops the vomiting caused by digitalis products.

Similarly, Weiss and Hatcher [10] have more recently demonstrated that the heart is the seat of reflex vomiting following the intravenous injection of tartar emetic. After gastro-intestinal administration, the path taken by afferent emetic impulses depends on the innervation of the organ concerned, passing sometimes by the vagus and sometimes by the sympathetic system. The coincidence of cardiac and emetic action in numerous drugs has thus served to direct attention to the heart as the probable seat of the emetic action of various substances. Consequently, drugs that block the impulses from the heart may often stop or greatly ameliorate existing emetic reactions.

Current Comment

THE SPLEEN AND RED BLOOD CORPUSCLES

The fact that splenectomy, either in youth or in adult life, is followed by few detectable changes in the physiologic reactions of the organism affected by the operation adds to the difficulty of deciding what the use of the spleen may be. It no longer satisfies the critical student to read that this organ is "the great blood filter purifying the blood in its passage by taking up the particles of foreign matter and effete red corpuscles." If there is normally a more or less continuous formation of red blood cells, a corresponding disintegration must be going on, so that no accumulation of erythrocytes ensues. Long ago it was maintained, by Hunter, for example, that the spleen is concerned with this work of destruction. Lately this view has acquired a new popularity, and found application in the treatment of certain types of anemia in which splenectomy is reported to have been beneficial by averting continued undue destruction of the red cells. Evidence for the destructive function is further acclaimed in the familiar appearance of fragments of erythrocytes in the spleen pulp. The destructive action of the spleen is further implicated in the studies of Pearce, indicating an increased resistance of the corpuscles to hemolysis after splenectomy. A special instance has been described by Kolmer in their behavior toward venom which ordinarily easily hemolyzes the red cells. In the physiologic laboratory of the University at Groningen, Bolt and Heeres [1] compared the behavior of blood before and after contact with the spleen, under otherwise comparable conditions, to hypotonic salt solutions which would tend to lake the red corpuscles. The results show that the organ has the power of diminishing the osmotic resistance of the erythrocytes. These are prepared for hemolysis, which takes place partially in the spleen itself. According to the Dutch investigators, the point of attack of the hemolytic power of the spleen lies in the surface layers of the erythrocytes where the lipoids are concentrated.

THE COMPARATIVE ELIMINATION OF INORGANIC COMPONENTS FROM THE BLOOD

The application of chemical analysis to the examination of the blood has served to elucidate what the excretory functions actually accomplish for the body. As the circulating medium is the carrier of waste products to the organs of elimination, it became apparent long ago that inability to excrete them properly should result in changes in the composition of the blood. There is a growing realization that not all waste constituents in the blood are excreted with equal ease. For example, in 1916, Myers, Fine and Lough called attention to the fact that very high figures for uric acid may be noted, not only in cases of advanced interstitial nephritis, but also in the very early stages of the disease, before a retention of either the urea or the creatinin had taken place. It was suggested that, when symptoms of gout were absent, a high blood uric acid might be a valuable early diagnostic sign of nephritis, possibly earlier evidence of renal impairment of an interstitial type than the classic tests of proteinuria and cylindruria. What has proved to be true regarding a sort of selective capacity for the elimination of certain common organic constituents of the blood by the renal epithelium appears to apply somewhat similarly to some of the inorganic components that normally find their way into the urine. At any rate, Denis and Hobson,[2] in studying the various inorganic ions in the blood serum of patients with nephritis and cardiorenal disease, have noted an unmistakable tendency toward increased values for phosphate and sulphate, in contrast with sodium and chlorin. The latter two are excreted with great ease, and, even in the case of the badly damaged kidney, retention of these elements seldom occurs; in this respect they may be said to resemble creatinin. On the other hand, the sulphate ion is apparently excreted with difficulty, so that in kidney insufficiency the concentration of this fraction may increase enormously, in some cases to 3,000 per cent. above the normal value; in this respect the sulphate ion may be likened to the uric acid fraction, although the percentage increases observed are far above any concentrations of uric acid so far reported. Hence Denis and Hobson incline to believe that the evidence that has been accu-

9. Hatcher, R. A., and Weiss, Soma: The Seat of Emetic Action of the Digitalis Bodies, Arch. Int. Med. **29**: 690 (May) 1922.

10. Weiss, Soma, and Hatcher, R. A.: The Mechanism of the Vomiting Induced by Antimony and Potassium Tartrate (Tartar Emetic), J. Exper. Med. **37**: 97 (Jan.) 1923.

1. Bolt, N. A., and Heeres, P. A.: On the Influence of the Spleen on Red Blood Corpuscles, Biochem. J. **16**: 754, 1922.

2. Denis, W., and Hobson, S.: A Study of the Inorganic Constituents of the Blood Serum in Nephritis, J. Biol. Chem. **55**: 183 (Feb.) 1923.

mulating for some years would make the hypothesis of a selective activity on the part of the kidney for the inorganic constituents of the blood seem to rest on a relatively sure foundation.

THE STORAGE OF VITAMIN A IN THE BODY

Among the various features of physiologic interest in connection with the modern study of the vitamins, the problem of their occurrence in milk has been outstanding. Scarcely more than a decade has passed since the existence of specific potencies indispensable to well-being was first recognized to exist in the secretion of the mammary gland. Meanwhile, it has become clear that the content of milk in some of the vitamins at least may vary widely. For the B factor the evidence is still somewhat conflicting, American investigators in general following the lead of Osborne and Mendel in being more skeptical than the English observers as to the occasional occurrence of marked enrichment of milk in this vitamin. With respect to vitamins A and C, however, it is generally accepted that the feed of the lactating animal may play an important part in modifying their presence in milk. Thus, in general, summer milk derived from cows in pasture tends to be superior in antiscorbutic potency to winter milk derived from animals living on air-dried roughages and grains that are poorer in vitamin C than are the fresh green feeds. The content of fat-soluble vitamin A in milk is also markedly influenced by the diet of the cows. Lately, Sherman and Kramer [1] of Columbia University have found that the storage of vitamin A in the body is markedly affected by previous conditions of the diet. Even at weaning time, young animals may already have a considerable store of vitamin A in the body, and thus be able to continue to grow for some time on a diet carefully freed from vitamin A but adequate in all other respects. The body can also store vitamin A at later ages. Sherman and Kramer remark that the differing stores of vitamin A in the bodies of experimental animals, even at early ages, has undoubtedly been a large factor, not fully appreciated, in previous experiments dealing with this vitamin, and in attempts to determine the vitamin A content of different foods. In the domain of infant feeding, it has a special bearing in relation to the transition periods when the young are being weaned to the artificial foods of later life. Some of the commonest of these, as the cereals, which often enter largely into the dietary of the very young, are comparatively poor in vitamin A. It is a great advantage to the young, therefore, to have a liberal factor of safety in a store of vitamin A in their own bodies. And here, in turn, the importance of a suitable diet of the mother during the period of lactation cannot be overlooked. The richness or paucity of her food in vitamins may have a cumulative significance for weal or for woe to the nursing offspring.

1. Sherman, H. C., and Kramer, M. M.: Experiments on Vitamin A, Proc. Soc. Exper. Biol. & Med. **20**: 201 (Jan. 17) 1923.

Telescopes.—Galileo's first telescope collected about eighty-one times as much light as the human eye. The Mount Wilson telescope, the largest in the world today, collects 160,000 times as much light as the human eye.

Association News

THE SAN FRANCISCO SESSION

Invitation from the Oregon State Medical Society

The board of councilors and members of the Oregon State Medical Society, through the secretary, Dr. Otis B. Wight, extend a cordial invitation to Fellows and members of the American Medical Association who go to San Francisco on special trains to stop at Portland and be the guests of the Oregon State Medical Society during a day's excursion up the Columbia River Highway. The trip will require at least three hours each way, allowing time for dinner. Special trains arriving in Portland in the morning or by early afternoon will be met by members of the Oregon State Medical Society, and automobiles will be available for their accommodation. The return to the trains will be in time for their departure at any time in the evening after 10:30.

No More Accommodations Available on New York Special

The train for the special twenty-five day tour from New York City to the meeting of the American Medical Association in San Francisco arranged for under the auspices of the Medical Society of the State of New York is already completely filled. Another train will be arranged for if 125 more subscribers can be secured. It will be necessary for applications for accommodations to be in not later than April 15. Applications should be sent to Mr. J. S. McAndrew, Tour Manager, Lifsey Tours, Inc., 1472 Broadway, New York, N. Y.

EDWARD LIVINGSTON HUNT,
Secretary, Medical Society of
the State of New York.

Post Convention Tour to Hawaii

In connection with the telegraphic invitation extended by Hon. Wallace R. Farrington, governor of Hawaii, as published in THE JOURNAL, March 10, the following comprehensive tour has been arranged:

Leaving San Francisco, night of June 29, the party will sail from Los Angeles, June 30, on the *Calawaii*. Visit to live volcano at Kilauea. Automobile drives round Honolulu and the island of Oahu. Reception by Governor Farrington. Visits to Kalihi leper receiving station and hospitals. Returning, arrive at Los Angeles, July 21. Total inclusive cost from Los Angeles back to Los Angeles, $415. Reservations and booklets may be obtained from Fred. J. Halton, 714 Marquette Building, Chicago, former Secretary, Hawaii Tourist Bureau, who will personally escort the party to Hawaii.

ANNUAL CONGRESS ON MEDICAL EDUCATION, MEDICAL LICENSURE, PUBLIC HEALTH AND HOSPITALS

Held in Chicago, March 5, 6 and 7, 1923

(Continued from page 779)

MEDICAL EDUCATION

MARCH 5—MORNING (Continued)

Preliminary Report of the Committee on Trained Nursing to the Council on Medical Education and Hospitals of the American Medical Association

DR. ROBERT W. LOVETT, Boston: The growth of the profession of trained nursing has been so rapid and so extensive that it is impossible that its educational side could have kept pace with its numerical growth. In 1880 there were fifteen training schools for nurses in the United States, with 323 pupils; in 1920 there were 1,755 schools, with 55,000 pupils. The number of schools increased 116 times over, and the number of pupils 170 times over between 1880 and 1920. Nor has the number of women applying for admission to training schools shown any signs of falling off, if one may generalize from the figures of the number of credentials presented for

entrance to the training schools of the state of New York for the three years ending July 31, 1920, 1921 and 1922.

The educational training of the nurse as it at present exists in the United States is not standardized, systematic or uniform in the matter of requirements for entrance, length of the course, and methods of teaching. Those persons who live in the medical centers and who come in contact only with schools connected with the great modern hospitals can hardly form an idea of the conditions existing in the country in general away from medical centers.

DEFECTS IN TRAINING SCHOOLS

There are five defects in the training schools of today: 1. The course, on the whole, is unsystematized, unstandardized, and far from uniform in the different schools. 2. There is in general thought to be too little systematic instruction in practical work in most courses, and too much theory; and whether or not this is true, there is certainly a lack of correlation between the two elements. 3. Many of the teachers in these schools are poorly equipped. 4. There is a waste of time of pupil nurses in uneducational routine work. 5. Many schools are connected with hospitals where clinical facilities are utterly inadequate.

CORRECTION OF DEFECTS

The correction of the defects may be approached by one of three ways: 1. We may strive to raise the upper level of the profession by means of the development and extension of the university school of nursing. 2. We may attempt to define the lower level of what may be considered as the education of a bedside nurse, to attempt after defining it to raise this level and to prevent so-called training schools from continuing as such when they do not conform to reasonable prescribed standards. 3. We may attempt to do both—to define and raise the lower level by a standard minimum curriculum with measures for its enforcement, and develop the university school of nursing to educate more and better teachers to help in carrying this out, and to assist in graduate teaching.

In approaching this matter by any one of these ways, it becomes necessary to consider the following remedial suggestions: (*a*) the desirable length of course for the bedside nurse of private practice; (*b*) supplementary graduate instruction for advanced or special nurses; (*c*) instruction to provide for subsidiary nursing service. It is the opinion of the committee that any proper nursing education should be based on the completion of a four years' course in a high school. In only six states is this a legal requirement at present, whereas in twenty states one year in the high school or its equivalent is considered sufficient. In five states, a grammar school education is all that is required.

MECHANISM FOR CARRYING OUT RECOMMENDATIONS

A committee of this sort which suggests a scheme of improvement, and leaves the matter there, fails partly in its purpose unless it recommends at the same time a mechanism by which recommendations, if adopted, may be carried out. The committee is of the opinion that:

1. The primary requirement of the present situation is the formulation and adoption of a standard minimum curriculum for the training of the bedside nurse of private practice; that this should be formulated with great care, be absolutely definite and simple, prescribe the percentage of time to be allotted to each subject, the character and sequence of the instruction, and provide for practical experience as well as theoretical instruction. This curriculum should be such that it could be carried out by relatively small hospitals and hospitals away from medical centers. If too elaborate, it will be useless.

2. A committee for this most important and responsible work should be appointed, containing in its membership physicians who are competent clinical teachers, representative nurses, and at least one educator, neither a physician nor a nurse. This committee should be arranged for by the American Medical Association in conjunction with the National League of Nursing Education, each having equal representation and appointing its own representatives. The educator should be selected by the other members of the committee when appointed.

3. After a proper time, training schools which do not conform to the scheme outlined by such a committee should be classed and published as schools not accepted by whatever body or committee or organization is made responsible for the matter.

4. The educational requirement for admission to the training school shall as soon as possible be made four years in high school.

5. The course for the bedside nurse of private practice should be made two years and four months.

6. Necessary changes in legislation should be advocated in those states requiring the three year course.

7. Subsidiary nursing should be favored and adopted, and be subject to the same committee or organization recommended (in paragraphs 2 and 3, page 29), which should formulate for it a standard minimum course, of the same simple character as the one described for the training of the bedside nurse.

8. Postgraduate facilities should be provided for the nurse who has graduated from the two year and four months' course, and who desires to qualify herself for special nursing or for teaching, and the university school of nursing can be of much help in raising the standard of teaching.

9. The nurse's training must be regarded as a serious educational problem requiring more of her time for educational work, with some reduction in the waste of her time in noneducational ward routine.

10. Better standards of teaching will be required in the improved schools from both physicians and nurses.

11. The last two mentioned needs will mean increased expenses to hospitals maintaining training schools, but in the end more serious results and greater expense will accrue to these hospitals unless something is done to remedy the present and increasingly chaotic conditions dealt with in this report.

Minority Report of Committee on Trained Nursing

DR. RICHARD OLDING BEARD, Minneapolis: The proposal of the majority of your committee that the American Medical Association should, at this late day, initiate a new movement of its own for the futile repetition of an already fulfilled purpose, the formulation of a model curriculum, will be unwelcome to the profession of nursing. Even were it a necessary or a desirable thing to do, the work to be studied is nursing and not medicine, and concerning the greatly major part of it medical opinion would obviously be of little service. It is neither necessary nor desirable. About the last thing that nursing education needs is the multiplication of model curriculums. What it does need is a broad, educational policy which may be brought to bear on the schools of nursing through the mechanism of their classification, to the higher levels of which they will then strive, in the interests of their own survival, to reach. The majority's proposal to preempt an equal representation with the nursing profession on a working committee is doubtfully politic. The medical profession of today must realize that it may fitly offer, while the profession of nursing may fitly accept, its friendly counsel in matters of nursing education, but it is no longer in a position, if it ever possessed the right, to dictate its conditions or to determine its limits. Its assumption of that right cannot fail of resistance from the profession of nursing. The horoscope of the nurse's training has permanently shifted. Its ideals have come under educational inspiration and control. Naturally, a claim that is based solely on a tradition of the past and has too often served as the excuse for the exploitation of nursing students must necessarily, under these new conditions, be denied; and it is a strictly ethical denial.

The minority of your committee desires further to recommend the suspension at this time of any action looking to the training and legalization of subsidiary nurses. Arguments for this recommendation may be briefly stated: The argumen: of public interest is paramount. An inferior type of semi-educated nurse may not be offered to large classes of people who are normally self-dependent, but are economically disabled by sickness, without incurring a sense of socia'

injustice they will resent. That resentment will be reinforced by the fact that the indigent sick receive, by grace of public taxation, a better type of nursing service than these people may command. The corollary of the proposal would lie in the offer of a second hand doctor at a diminished fee. The one suggestion leads straight in the direction of state nursing, the other in the way of "state medicine." Let us not tempt either. Social machinery may be directed by which, through better hospital service, through systems of hourly nursing, through nursing bureaus publicly maintained, efficient nursing at graduates fees may be secured. Cooperation of the nursing profession to this end is to be expected, but responsibility for these measures should not be left to it alone. It is not in the interest of the public that inadequately trained nurses be placed in charge of convalescence and chronic cases. Too many sources of danger arise during convalescence; while the chronic patient usually presents a most difficult problem for the best educated nurse.

The major consideration on which the proposal of the subsidiary nurse has been based is an economic one. The majority report of your committee and the findings of the Rockefeller survey alike suggest that legislation to control the name, the training, the practice and the wage of the subsidiary nurse will be indispensable. The theory of the law and the results of practical experience go to show that no constitutional measure can be devised that will efficiently tag the subnurse; that will determine her degree of education, more or less; that will keep her where she belongs in service, or will prevent her demand for wages as high as the graduate nurse gets. The legislative committee of the Minnesota legislature now in session has refused to provide for the registration of "subnurses" and it is quite clear that public sentiment is not back of the project.

The place of training of the subsidiary nurse is an unknown quantity. Her training in the same hospital with the regular nurses is impracticable. The proposal to train her in inferior hospitals, unfit to educate graduate nurses, will be unacceptable because it will mean the self-acknowledgment of their inferiority and will react on their supply of patients. It is a significant thing that at the last annual meeting of the American Hospital Association a number of hospital administrators supported the subsidiary nurse in theory, but that all of them sidestepped the responsibility of her training. They are not to be blamed. It would be an expensive and unrewarding task. The ethical error of the proposal of the "subnurse" lies not alone at the point of nursing service; it lies at the heart of nursing education. The women are not to be found who, in any number or with any permanent purpose, will be content with a reparation and a position inferior to that which another group of nurses receives and occupies. The minority of your committee recommends then that the proposal be disapproved by the Council.

DISCUSSION ON PAPER OF DR. RYERSON

DR. C. R. BARDEEN, Madison, Wis.: The student should have some kind of bird's eye view of the human being as a whole. He needs to have more than a knowledge of anatomy, physiology, chemistry and pathology as early as possible because, he is dealing with individuals, and not wholly with systems of organs. I should like to see the experiment suggested by Dr. Ryerson tried out. Something along the line we have been giving is better than a purely vertical scheme, although it is well to study the true association of the essentials with what are not essentials for practitioners of medicine, and try to stick to essentials and not lead the student astray by too many details that are not essential. There should be something to stimulate the student's understanding from the beginning that he is not to study anatomy so many hours a week and physiology so many hours a week, but that he is studying the human organization as a whole in relation to health and disease.

DR. G. CANBY ROBINSON, Baltimore: Correlation of the work in the various departments is the dominating idea of curriculum makers at present. In the arrangement of the teaching plant we have one important factor in bringing about this desirable correlation—a point I am going to discuss tomorrow. Another point of considerable importance is the type of training and interest which teachers in the clinical departments have in the fundamental departments. It will not make much difference if we have correlation of the physical plant, unless the teachers of the fundamental and clinical subjects have a real interest in each other. We are urging that the laboratory men have an interest in the work of the clinics, and I feel that those who are teaching clinical subjects should have an equally clear understanding of the problems and progress of the work in the laboratory; so, after all, what we want is intellectual correlation. That can be brought about fairly satisfactorily with the present type of curriculum, and it might be ideally done with the type of curriculum presented today; but I feel that there should be an effort to bring about more intellectual correlation of the different departments than we have at present, so that a back and forth flow of ideas will be definitely and conscientiously presented to the students as they go through the courses.

DR. WALTER L. BIERRING, Des Moines, Iowa: While the plan presented by Dr. Ryerson appears to be novel to our American system of education, it is distinctly an English method and has not only been adopted by English schools but is now being required by the General Medical Council of Great Britain. The council makes a definite requirement that there shall be a distinct correlation between the fundamental sciences and the clinical branches. For instance, in the third year it requires one hour a week in each of the three subjects, anatomy, physiology and pathology, and while it does not require that there shall be the same number of hours during the fourth and fifth years, it suggests that there shall. It especially suggests the introduction of clinical courses in the second year. In the examinations at Edinburgh last summer and in the examinations of the triple qualification board of Scotland, which is conducted in medicine and surgery, definite examinations in applied anatomy, applied physiology and applied pharmacology as well as surgical pathology are also required. The candidate is required to outline in the examination in clinical medicine the heart, the lungs, the liver, the spleen and various other anatomic areas. The same thing is required in surgery. The National Board of Medical Examiners in this country has been trying to copy the same method by having in its examinations applied anatomy, applied physiology, applied pharmacology and surgical pathology.

DR. ALEXANDER PRIMROSE, Toronto: Most schools today attempt to teach the primary subjects early in the course, and in the final years to apply them. The thing now suggested is to teach the clinical years in correlation with the primary departments. Dr. Ryerson has spent much time and labor on this subject, and his colleagues are sympathetic; but we have not as yet attempted to adopt this method. I do not think it could succeed unless a large number of medical faculties of this country should agree to adopt a similar scheme. I hope this subject will be seriously considered and be brought to an issue as to the determination on the part of medical faculties to accept the principle or not.

DR. J. PARSONS SCHAEFFER, Philadelphia: It seems unfortunate that the terms "preclinical" and "clinical" ever came into being. I want to emphasize what Dr. Bardeen has pointed out, that certain things must be done first. We cannot do everything at the same time, and I believe that anatomy of the human body should antedate everything else, particularly an analysis of it. Granting that this may be true and correct, it would then follow that we should do something to bring home at once to the students the why of everything, and for that reason certain clinical subjects should be taught in the freshman year. It must be done to create interest and not have the students study anatomy merely to complete the course, to pass an examination and then to forget it. I know of no better way to correlate the subjects than for the surgeon and the internist to present their cases from the point of view of anatomy and physiology, and the particular thing they have in mind. At present it is not so presented. An internist or a surgeon jumps good and hard on a student if he does not know his anatomy. An ophthalmologist may strike a student good and hard on some detail of anatomy which we are unable to give in the limited number of hours at our disposal. The solution of teaching these subjects is

to bring something into the freshman year that will create interest and show the why and wherefore.

DR. VICTOR C. VAUGHAN, Chicago: Some one spoke about giving lectures on diabetes to freshmen students. How can you give such lectures with any degree of satisfaction when a student has never seen the pancreas and does not know where it is located? He has no idea of the histology of the pancreas. It is perfectly absurd to talk about the islands of Langerhans to a freshman who has never made an observation, and who does not know which end of the microscope to look through. Medicine, as I have defined it several times, consists of those facts culled from the various sciences which can be used in the prevention or cure of disease. The medical student does not know the fundamental sciences. It may be I am an old fogy, but I would prefer to see the system that has been outlined tried in some school in which I am not interested.

DR. LOUIS F. GERMAIN, Milwaukee: I think we all agree that anatomy, physiology and chemistry should be taught during the entire medical course. The question is how to do it. There is a great deal of anatomy, physiology and chemistry which is only of academic rather than practical value, but it must be taught. It is not that we do not teach anatomy, physiology and chemistry right, but that we do not continue teaching these branches through the entire medical course. It is up to the clinician to continue teaching applied anatomy and applied physiology during the entire medical course. A student who comes to us at the end of the fourth year has generally forgotten his anatomy and physiology. Who is to blame for it? Not the anatomist or physiologist, but the clinician. He has not kept up with the teaching of these subjects.

DR. HENRY PAGE, Cincinnati: To lay down a curriculum with 4,000 hours, as suggested in the Toronto scheme, however admirable it may be in some respects, is going too far in the way of rigidity from which we have been trying to escape. One reason why the clinician has not kept up with teaching in anatomy is that the machinery does not exist to do it. We know that the amount of anatomy which remains with a student after the first year, much less the second and third years, is practically a negligible quantity. When he comes to applied science he has lost or forgotten all his anatomy, and has to learn it over again or never does learn. To correct that, the student should apply his anatomy as a subject relating to medicine.

We have introduced into our school a course in anatomy called the anatomy of physical diagnosis, a rather strange title, but in that course the student is brought in contact with the clinician, and we have been trying to get the best clinician possible to teach that course. Our full-time professor of medicine (Dr. Roger Morris) thinks the course so important to the students that he himself is teaching it.

DR. A. C. ABBOTT, Philadelphia: I am profoundly grateful to Dr. Ryerson for the concrete scheme he has brought before us. As has been voiced here during the last two years, many are dissatisfied with the experiment that has been in progress for fifteen years, although they are just starting it in France as a new thing. It is essentially what we started when I began teaching, and has gone from bad to worse and we are hoping to get rid of it. I refer to the detached teaching of the sciences separate from their clinical application. Any plan is wrong that does not constantly convince the student that he is studying medicine. I can understand the fascination, interest, and pleasure that the various special branches give to him; but if he is permitted to study them in a detached way, he does not get a comprehensive view of medicine and does not leave school a competent practitioner of medicine—the purpose for which medical schools are organized.

DR. GEORGE E. DE SCHWEINITZ, Philadelphia: We are all agreed that, good as it has been, and excellent as the teaching is, the medical curriculum must be improved. An investigation similar to that referred to by the chairman, made with medical students in the school in which I have the honor to teach, brought out the following objections to the present curriculum: (*a*) Lack of correlation between one subject and another; (*b*) inability to understand why certain things are taught; (*c*) inability to understand why so much of certain branches is taught. The only way these doubts can be overcome is by better cooperation between the teachers of the various branches. No single branch should be considered as finished and then locked off, but should be carried on through the entire curriculum by the men most interested, whether it be medicine, surgery, or the special branches. Take my own branch, ophthalmology. It is impossible to turn out a medical student as a specialist. It is wrong. We can more easily make the student understand why any subject is a part of the curriculum, if there is a close cooperation of the fundamental and the clinical branches. We are all anxious to improve the curriculum and to meet it in all the ways suggested here, but I am reminded of what a distinguished educator in this country said not long ago: "It is about time we take up the teachers and straighten them out." There are lots of teachers in medical schools, admirable men, wise, well instructed, excellent, but they do not teach students to the best advantage. Being a pioneer myself in that respect, I speak with authority. Teaching is a very important part of our business today, and while we are anxious to improve the curriculum, we must also try to improve the methods whereby that curriculum is interpreted to the students who wish to go out as the finished product of our efforts, and that, after all, is what we are trying to do.

DR. E. STANLEY RYERSON, Toronto: Preventive medicine was purposely introduced into the first year to show the student at the beginning of his course that the prevention of disease is just as important as its cure. If he acquires this idea at the beginning and continues it throughout the course, he is going to have an enormous influence, when he enters practice, in forwarding all the various public health movements. In working out the details of a revised curriculum, it would be most essential to have the intellectual correlation between the teachers of the various departments as spoken of by Dr. Robinson.

(To be continued)

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

ALABAMA

Oil Donated for Mosquito Eradication.—The Standard Oil Company has donated 1,000 gallons of oil for use in the mosquito eradication campaign that will be conducted by the state department of health of Alabama this spring. Other oil companies have indicated that they will donate oil for the same purpose.

Chiropractor Convicted.—Reports state that P. R. Ritchie, a chiropractor of Mobile, was convicted in the circuit court by a jury, February 21, of practicing medicine without a license, and was fined $50 and costs. In default of payment of the fine, the defendant was sent to the county jail for twenty days.

ARIZONA

Maricopa County Medical Society Aids "Hygeia."—The Maricopa County Medical Society with headquarters at Phoenix, has sent in 120 subscriptions to *Hygeia,* including hotels, clubs, schools, colleges, ministers, physicians and laymen interested in public health.

ARKANSAS

Catholic Hospital for Eldorado.—A new Catholic hospital will be erected at Eldorado at a cost of $40,000, it is announced. The building will contain a charity ward for the housing of oil field workers who may be injured in the course of their work.

Insane Persons to Be Kept in Jails.—Dr. C. C. Kirk, superintendent of the State Hospital for Nervous Diseases, Little Rock, has requested the county judge and sheriff to commit all mentally deficient persons in their jurisdiction to the county jail in future, instead of making application for their

admission to the state institution, because of the overcrowded condition of the hospital. Dr. Kirk states that the institution now is taxed beyond its capacity, with a total of 2,036 inmates. The normal capacity is 1,850.

Medical School Bill Indefinitely Postponed.—The Arkansas senate, February 28, postponed indefinitely a bill creating a board of five physicians to administer the affairs of the University of Arkansas Medical Department, Little Rock. It was charged that the bill was intended to transfer control of the school from its present dean to another physician. Following this action, the appropriation bill for the school was called up, and Senator Norfleet sought to amend the appropriations by reducing the salary items from $36,500 to $15,000. The motion was lost, and the body, sitting as a committee, recommended the passage of the appropriation bill as it stood.

CALIFORNIA

Extension of County Health Service.—A new branch health unit has recently been opened by the Los Angeles County Health Department to serve Alhambra, San Gabriel and El Monte. Dr. A. S. Baker, formerly of Seattle, has been appointed health officer for that district. A model hygienic laboratory is being installed which will make the usual health department laboratory tests for physicians and the general public. Plans are now under way for the establishment of a community health center for Alhambra, San Gabriel and El Monte, in connection with the new office. A dental clinic and a babies' clinic will be established in the new unit.

Hospital News.—The Sante Fe Railroad will erect a hospital at Needles as part of its $5,000,000 development program in southern California. Because practically the entire population of Needles is dependent on the railway, the hospital will serve the city virtually as a public institution.——Ground was broken, March 1, for the new $600,000 Mater Misericordiae Hospital to be erected in Sacramento to replace the present wooden structure on R Street. The new hospital, which will be six stories high, will be in the form of an X. The site comprises 8 acres.——Excavation work on the hospital to be erected at Bakersfield for Kern County, at a cost of $450,000 was started the first week in February.——Work on a new 200-bed hospital, to be erected in San Diego by the Sisters of St. Joseph, on a new site on Fifth Street, will start in April. The present hospital site on University Avenue will be sold.

CANAL ZONE

Motion Pictures for Lepers.—Thomas Meighan, a motion picture actor, has donated a projecting machine for the lepers in the colony on Canilos Island, off the coast of Panama. The Paramount Company will supply films at intervals.

CONNECTICUT

Personal.—Dr. Edwards A. Park, professor of pediatrics at the School of Medicine of Yale University, addressed the New England Pediatric Society at the Boston Medical Library, Boston, March 9, on "Special Roentgen-Ray Diagnosis of Rickets, Syphilis and Scurvy." Dr. Park addressed the New York Society of Orthodontists at Vanderbilt Hospital, New York, March 10, on "Facts About Children of Practical Importance to the Orthodontists."

Yale University News.—The Sterling Chemistry Laboratory, a new $2,000,000 structure, will be formally dedicated, April 4, on which day in 1804, Benjamin Silliman, the first professor of chemistry at Yale, delivered his first lecture. English, Scotch, French, Italian, Dutch and Canadian universities will be represented by delegates. The dedication will take place during the annual session of the American Chemical Society in New Haven. The Sterling Hall of Medicine, the next unit to be completed under the fund made available by the bequest of John W. Sterling, is progressing steadily.——Cheney Brothers, silk manufacturers of South Manchester, have offered the sum of $1,000 yearly to Yale University for two years, the money to be used for a fellowship in organic chemistry in the graduate school. This fellowship will be known as the Cheney Fellowship in Organic Chemistry, and will be awarded to a graduate student who has demonstrated the ability to pursue work leading to the degree of doctor of philosophy.

DISTRICT OF COLUMBIA

Smithsonian Institution.—Mr. Henry White has been reappointed regent of the Smithsonian Institution, Washington; Frederick A. Delano has been appointed to succeed the late John B. Henderson, and Irwin B. Laughlin to succeed the late Alexander Graham Bell.

ILLINOIS

Physician Fined for Violating Harrison Narcotic Law.—According to reports, Dr. David H. Worthington, Aurora, aged 71, was found guilty of violating the Harrison Narcotic Law, in the federal court, Chicago, March 9, and fined $100.

Hospital News.—A fifty-bed hospital is being erected by the Ingalls-Shepard Forging Company for the city of Harvey. The institution will cost $250,000. Lodges, fraternities and social societies will raise $20,000 for the furnishings and equipment.——St. Mary's Infirmary, Cairo, has recently added an annex for tuberculous patients, a nurses' home and a new wing to the main hospital building at a total cost of $225,000.——A new three-story addition will be erected at St. Vincent's Hospital, Taylorville, at a cost of $75,000.

Schick Test for Inmates of State Institutions.—Under a cooperative arrangement between the state departments of public health and welfare, a campaign is on foot for applying the Schick test to inmates of state institutions. The work will be carried out under the direction of the health department, which will also furnish toxin-antitoxin for the immunization of all those giving positive reactions. The boys' school at St. Charles carried out the plan some time ago, and all new-comers are now tested on arrival, and immunized when nonimmune to diphtheria. During the week of March 11-17, the 2,000 inmates of the Lincoln State School and Colony were Schick tested, and follow-up work will proceed immediately. Other state institutions in which danger from diphtheria exists will be treated in like manner.

Tuberculosis Sanatorium Survey.—A field physician from the state department of public health has recently completed a survey of the eight county tuberculosis sanatoriums now in operation in Illinois. The findings show a maximum capacity of 306 beds. The average number of patients cared for in the eight institutions is 251, while the average cost of maintenance each month for all the sanatoriums is $19,200, or slightly more than $76 a month for each patient. The survey showed further that three of the sanatoriums hold diagnostic clinics; all but one conduct dispensary service, and all but two carry on, in some measure at least, county tuberculosis and public health work. The lowest appropriation for any of the sanatoriums for 1923 is $10,000, but the total amount available in that instance is nearly $30,000, a contract with the U. S. government with reference to tuberculous ex-service men making up the difference. All the seven other sanatoriums have appropriations for 1923 ranging from $25,000 to $40,800 for maintenance, and in two cases extra appropriations for building.

Chicago

Illegal Practitioner Fined.—It is reported that "Prof." J. B. Cottaze, who maintained an office on West Madison Street, was fined $25 and costs for practicing medicine without a license, by Judge Adams in the municipal court, March 13. Cottaze, it is alleged, collected thousands of dollars from his patients. The judge ordered the "professor" to leave the city.

Personal.—Dr. Frank Smithies has resigned as gastroenterologist and attending physician to the Augustana Hospital, to assume the duties of physician-in-chief and head of the department of internal medicine at St. Elizabeth's Hospital.——Dr. Alfred A. Strauss addressed the Vermilion County Medical Society at Danville, March 6, on the subject of "The Surgical Treatment of Gastric Ulcers."

Medical Student Arrested.—Reports state that "Dr." Thomas B. Bondus, with offices in the Kesner Building, was arrested, March 2, on charges of practicing medicine without a license. Bondus is said to be an osteopath, who claims he is studying medicine. According to records, Bondus studied medicine at the Hahnemann Medical College and Hospital, Chicago, as a third-year student, 1921-1922, but never graduated.

Society News.—At a meeting of the Laboratory of Surgical Technique of Chicago, March 22, Dr. Leon Asher, professor of physiology at the University of Bern, Switzerland, spoke on "The Physiology of the Thyroid Gland from the Clinical Standpoint." Dr. A. J. Ochsner, presided.——At the fifty-sixth regular meeting of the Chicago Society of Internal Medicine, March 26, Dr. J. Curtis Lyter, St. Louis, will speak on "The Pathways of the Mediastinum, Lungs and Pleura."

Conference on Hospital Service.—At a meeting of the American Conference on Hospital Service, held in Chicago, March 5, the following officers were elected for the ensuing year: president, Dr. Frank Billings, Chicago; vice presidents, Drs. Andrew R. Warner, Chicago, and Linsly R. Williams,

New York, and treasurer, Dr. Harry E. Mock, Chicago. Dr. Fred C. Zapffe, Dr. Linsly R. Williams and Miss Sarah B. Place, R.N., Chicago, were elected to the board of trustees (term expires 1926).

Joint Clinical Meeting.—The Chicago Ophthalmological Society and the Chicago Laryngological Society will hold a joint clinical meeting, April 16-17, under the presidency of Dr. Robert von der Heydt. The first day will be devoted to clinical presentations at the various ophthalmic clinics, and the second day to work at the otolaryngologic clinics. A banquet will be given at the Hotel Sherman, April 16, to which all ophthalmologists and laryngologists are invited. Dr. William Lemuel Benedict, Rochester, Minn., will address the meeting.

City to Recognize Service of Physicians.—The city finance committee, March 15, approved recommendations of Dr. Herman Bundesen, health commissioner, that "as an act of courtesy" physicians who are aiding the health department as a consulting staff be placed on the city pay roll at $1 a year. Dr. Bundesen stated that these men are giving their time free in the interests of public health, and their services could not be bought by the city. There are 100 on the list, among them being Drs. Louis E. Schmidt, Joseph B. DeLee, David S. Hillis, Isaac A. Abt, Arthur I. Kendall, Ludvig Hektoen, William A. Evans, John Dill Robertson and Julius H. Hess.

IOWA

Des Moines Subscription to "Hygeia."—The city of Des Moines has sent in 166 subscriptions to *Hygeia*, including physicians, ministers, teachers and laymen in the community.

Hospital Plans.—A campaign to collect $150,000 has been inaugurated to erect a new building at St. Luke's Hospital, Macon City. Ground for the new institution will be broken, April 8. The entire cost of the structure is estimated at $600,000.——The contract has been let for the new $275,000 addition to the Mercy Hospital, Cedar Rapids.

MARYLAND

Maryland Psychiatric Society Plans Clinic.—At a special meeting of the Maryland Psychiatric Society held at Athol Sanitarium, March 13, announcement was made of the opening of a mental hygiene clinic about April 1, at the University of Maryland. It was also decided at this meeting to bring to the attention of the next general assembly, the importance of establishing a city psychopathic pavilion in Baltimore at a cost of about $300,000; until such provision is made by the legislature, advice regarding treatment to early mental cases will be given at the proposed mental hygiene clinic. The following program was presented: "A Mental Health Clinic," by Dr. Arthur P. Herring, commissioner of mental hygiene of Maryland; "Medical Aspects of a Mental Health Clinic," by Dr. Ross McC. Chapman, superintendent of Sheppard and Enoch Pratt Hospital.

Children's Clinics for Baltimore City.—Mrs. Henry Barton Jacobs has turned over to Baltimore and Dr. William S. Baer, for child welfare work, the Robert Garrett Hospital for Children, which has been closed since the death of Dr. Walter B. Platt, formerly physician in charge. Dr. C. Hampson Jones, commissioner of health, will establish there six free clinics—tuberculosis, dental, eye and ear, nose and throat, child welfare and a Schick, or antidiphtheria, clinic. Dr. Baer will maintain beds for the preliminary examination and treatment of children in connection with his orthopedic work. He will work independently, but there will be at all times cooperation between him and the Baltimore Health Department. Mrs. Jacobs will maintain the hospitals at her own expense, and the city will provide the health department with funds for the employment of three physicians at $1,000 each, and for such equipment as may be necessary. The clinics will be open by May 1. Dr. John E. O'Neill will have general charge of the tuberculosis clinic, with a specialist assigned to assist him. The other appointments have not been made.

MICHIGAN

Midwives in Detroit.—The Detroit Department of Health states that during the last three years permits have been refused or revoked for about 300 midwives. Nearly 180 midwives were at work in Detroit, a few years ago. Following strict examination and inspection by the health department, there are only forty midwives with permits now practicing.

MINNESOTA

Liquor Permits Revoked.—According to reports, twenty-five physicians in Minnesota have had their permits to prescribe liquor revoked for abuse of the privilege. It is stated that, of nearly 5,000 prescriptions filled in Minneapolis, 50 per cent. were issued to fictitious names.

MONTANA

Sterilization Bill Signed.—Governor Dixon, March 15, signed the eugenic sterilization bill, passed by the legislature recently. This bill provides for the sterilization of all idiots, feebleminded persons and epileptics confined in institutions, on consent of the guardian or custodian.

Conference on Rocky Mountain Spotted Fever.—Dr. W. F. Cogswell, secretary of the Montana State Board of Health, has issued invitations to the health officials of the Rocky Mountain states, for a conference on the control of Rocky Mountain spotted fever, which is most virulent in the Bitter Root Valley, Montana. The disease, however, has been reported also in Wyoming, Utah, Idaho, California, Oregon and Washington.

NEBRASKA

Physicians' Licenses in Peril.—It has been discovered that every license issued since the passage of the Code bill, in 1919, may be declared illegal should the issue be carried to court, it is reported. Governor Bryan found that the Code Law nullified the act creating the state medical advisory board which has been issuing medical licenses for nearly four years without legal authority. When the board is again legalized by an act to be presented at the present session of the state legislature, it is planned to issue a blanket order affirming the legality of all physicians' and surgeons' licenses issued within the last three and one half years.

NEW MEXICO

Personal.—Dr. Eugene William Fiske, Santa Fe, has resigned as penitentiary physician following four years of service.——Dr. William M. Lancaster, Clovis, has been appointed health officer of Curry County, to succeed Dr. George K. Maynard.

NEW YORK

State Society Opposes Antiheroin Bill.—The Medical Society of the State of New York has announced its opposition to the bill introduced by Senator Bloch prohibiting the sale or manufacture of heroin in the state of New York. Dr. James N. Vander Veer, chairman of the legislative committee of the society, informed Assemblyman Duke, chairman of the Assembly Codes Committee, that the Medical Society of the State of New York wishes to be heard on this measure.

Antivivisection Bills Killed.—The Assembly Codes Committee, March 14, voted unanimously to kill the Cotillo-Leininger antivivisection bills. One bill purposed to prevent "experimentation" on children, and the other would have prevented experiments on dogs. Among those at the hearing who opposed the antivivisection bills, March 13, were Drs. Simon Flexner, William H. Park and Frank D. Jennings, representing the Medical Society of the State of New York.

New Chiropractor Bill.—A bill aimed at chiropractors was introduced into the legislature, March 9, by Assemblyman Dr. H. W. Lattin of Orleans County. It amends the public health law by providing that a person convicted of practicing medicine illegally may be punished by a fine of $50 or imprisonment of not more than six months, or both. He is also liable for an additional penalty of $500 for each offense, to be recovered by an action brought by the attorney general.

Professor Frankl Lectures.—Dr. Oskar Frankl, professor of pathology, the University of Vienna, delivered the first of the spring series of ten practical lectures given under the auspices of the Kings County Medical Society, at Brooklyn, March 9. Dr. Frankl's subject was "The Endocrines." Beginning March 12, he will lecture in the Hoagland Laboratory, Brooklyn, from 4 to 6 o'clock daily until the end of the month. A similar course at Cornell University Medical College in Manhattan will be conducted simultaneously. During April and May, Dr. Frankl will conduct courses in St. Louis and Chicago.

Plan to Improve Outpatient Service in Pediatrics.—The section on pediatrics of the Associated Out-Patient Clinics of New York has, through its executive committee, been working out plans for improving outpatient service in pedi-

atrics. The children's medical division of Bellevue Hospital was chosen as an institution in which to demonstrate a well-rounded pediatric service, and the demonstration was begun, February 1. Unity between the inpatient and outpatient service will be possible by the transfer of records between ward and outpatient department. A plan for the study of results in pediatric outpatient service is also being tried out. Reports of the demonstration at Bellevue and the plan for studying results will be published for the benefit of those interested in pediatric outpatient service.

Bill to Extend Workmen's Compensation.—A bill has been introduced into the legislature which aims to bring all individuals or firms employing two or more persons under the workmen's compensation insurance act. The measure has been endorsed by the state federation of labor and the American Association of Labor Legislation. Under the proposed bill, physicians, lawyers and any other person employing two or more stenographers would be compelled to take out workmen's compensation insurance. The sponsors of the bill call attention to the fact that in many instances the courts have awarded heavy damages, which the small employer of labor has had to meet. There are several other measures proposing changes in the workmen's compensation law before the legislature. One bill, known as the Lacey O'Conner measure, greatly increases the awards that can be made for permanent or partial disability sustained in industrial plants. Another bill increases the waiting period for filing claims from seven to fourteen days, and it is contended that this will increase claims by 17 per cent. A third bill reduces the noncompensated waiting period in industrial accidents from fourteen to seven days, and provides for compensation from the date of the accident, if the period of disability extends over twenty-six days instead of forty-nine days.

Proposed Amendment to Public Health Law.—A bill entitled "An Act to Amend the Public Health Law in Relation to the Conduct of Medical Examinations" provides that the state board of medical examiners shall consist of nine or more members, one third to be annually appointed by the board of regents. It raises the fee for examination to $35, and provides that the candidate must be a citizen of the United States. It lengthens "a satisfactory course" to eight months. It further provides that, in lieu of the first two years of the medical course, the regents may accept evidence of graduation with the degree of bachelor or doctor of dental surgery from a registered dental school, if the requirements are essentially those of the first two years in medical school. The subjects of hygiene and sanitation are omitted from the list of subjects in which the regents may make conditional admissions to examination. The act would admit to examination a candidate who has received the degree of bachelor of medicine from a recognized school of medicine in this country or in Canada or from a medical school in a foreign country maintaining a standard not lower than that prescribed for medical schools in this state. The examination, according to this amendment, will be held three times annually, and the regents may accept, in lieu of their examination, the certificate of the National Board of Medical Examiners. Other portions of the bill have been left intact.

New York City

Harvey Society Lecture.—The ninth Harvey Society lecture will be delivered by Dr. John Howland, professor of pediatrics, Johns Hopkins University, Baltimore, at the New York Academy of Medicine, March 31. His subject will be "Rickets."

Personal.—Milton C. Whitaker, for six years professor of chemical engineering at Columbia University, has been awarded the Perkin medal presented annually for the most notable achievement in applied chemistry. The award was made in recognition of a series of achievements in the continuous production of ethyl acetate made by Dr. Whitaker and a corps of research chemists working under his direction. ——Dr. Charlton Wallace has resigned as surgeon in charge of the Reconstruction Hospital, Central Park West.——The Brooklyn Chapter of Hadassah gave a reception for Dr. I. M. Rubinow, who has just returned from Palestine, where he was for four years director of the Hadassah medical organization. The occasion marked the opening of the Hadassah campaign to raise $100,000 for nonsectarian medical work in the Holy Land.——Dr. Bronson Grothers of Harvard University read a paper on "The Intracranial Mechanism of Labor and Its Relation to Later Disabilities in the Child," before a joint meeting of the section of obstetrics and gynecology and the section of pediatrics of the New York Academy of Medicine, March 8.

OHIO

Muskingum County Academy of Medicine Aids "Hygeia."—The secretary of the Muskingum County Academy of Medicine has forwarded eighteen subscriptions to *Hygeia* as representing a special subscription by that society.

Chiropractors Fined.—Peter Boike, Madisonville, and Adolph Stoerker, Norwood, chiropractors, were fined $50 and $25, respectively, by Judge Dumont in St. Barnard, March 7, it is reported, for practicing medicine without a license. Both men decided to serve a prison sentence in preference to paying the fine.

Workmen's Compensation Law. — The Supreme Court recently decided that the term "injury" in the Ohio Workmen's Compensation Law does not include diseases contracted in the course of employment, and accordingly holds that death from typhoid fever is not compensable. In the case of *Industrial Commission* v. *Cross* the judgment of the Ohio Court of Appeals was reversed.

Columbus Academy of Medicine.—At a dinner given by the academy at the Chittenden Hotel, February 26, Dr. Paul Roth of Battle Creek Sanatorium, Battle Creek, Mich., gave an address on "The Respiratory Exchange in Relation to Clinical Diagnosis." Dr. Charles E. Roderick, also of the Battle Creek Sanatorium, presented interesting data on the possibility of spreading respiratory infection by means of the apparatus for the determination of basal metabolism.

OKLAHOMA

Hospital News.—The deal tentatively made with members of the Bryan County Medical Society regarding the Durant Memorial Hospital (THE JOURNAL, March 10, p. 704) was not consummated. The institution has been purchased by two local physicians and is now open to all medical practitioners who wish to take advantage of its facilities.

Medical Board Bill Goes to Third Reading.—The senate bill creating a state board of medical examiners, with an amendment excepting Christian scientists from certain of its provisions, was passed to engrossment and the third reading by the upper house, February 28. This act creates a board of seven members, appointed by the governor, who shall be graduates from recognized medical colleges and who have been legal and active practitioners of medicine in Oklahoma for at least five years prior to their appointment.

Health Commissioner Asks Physicians' Support.—Dr. E. A. Davenport, recently elected state health commissioner, has sent letters to all the physicians of the state asking that medical forces rally to support the department of health in securing appropriations totaling $208,670 for each of the next two years. Three large departments have been added to those under control of the board; the bureau of control of epidemics, for which $15,000 is asked; a venereal disease department, for which $20,000 is asked, for upkeep, and a bureau of maternity and infant welfare, to support which $21,370 is asked.

PENNSYLVANIA

Graduate Course for General Practitioners.—A graduate course of three weeks' duration will be given at the University of Pittsburgh School of Medicine, beginning May 31. This course will be devoted to the interests of the general practitioner. Instruction will be by lecture, clinic and demonstration, at the school of medicine and the large hospitals of the city.

Philadelphia

Dr. Deaver Made Professor Emeritus.—Dr. John B. Deaver, who having reached the age limit, retired as John Rhea Barton professor of surgery at the University of Pennsylvania Medical School, Philadelphia, June, 1922, has been named emeritus professor of surgery in the university.

UTAH

National Association to Be Entertained.—Dr. F. A. Goeltz, president of the Salt Lake County Medical Society, has appointed a committee to carry out plans for the entertainment of the physicians who will pass through Salt Lake City in June en route to, and returning from, the annual session of the American Medical Association in San Francisco. The medical society will have a reception committee at the depot to meet every delegation, and each party will be consulted as to its wishes with regard to recreation while in the city.

WASHINGTON

Tacoma Subscriptions to "Hygeia."—Pierce County Medical Society with headquarters at Tacoma has sent in 199 subscriptions to *Hygeia*, the new journal of individual and community health, published by the American Medical Association.

CANADA

Social Hygiene Campaign.—A social hygiene campaign was inaugurated in January by the Canadian Social Hygiene Council, under the auspices of the department of health of the province of New Brunswick. Dr. John J. Heagerty of the federal health department, Dr. Gordon A. Bates of the Canadian Social Hygiene Council, and Dr. John A. McCarthy of the health department traveled almost continuously for two weeks conducting public lectures in every part of the province.

Personal.—Dr. Norman H. Sutton, Peterborough, has been appointed district health officer of District No. 4 under the Ontario Provincial Board of Health, to succeed Dr. George Clinton.——R. B. McCauley, Sault Ste. Marie, has been appointed sanitary inspector of the board of health of the Province of Ontario, to succeed the late James Taylor.——It is announced that legislation is now under way in Ontario to reward Dr. Frederick Banting of Toronto for his discovery of insulin.——Dr. A. E. Webb-Johnson, D.S.O., of London, England, recently addressed an assemblage of physicians and medical students at the Toronto Academy of Medicine.

GENERAL

Committee on Narcotics Completes Report.—Dr. Rupert Blue, U. S. Public Health Service, who has been representative of the United States at Geneva during the deliberations of the League of Nations committee on narcotics, advised the State Department this week that the committee had completed its task, and copies of the report agreed on by the various national representatives were being forwarded to Washington. Dr. Blue was assigned to the committee at the request of the league.

First Aid Manual for Postal Employees.—Just before his transfer from his position as head of the Postoffice Department to the position of Secretary of the Interior, Dr. Hubert Work issued a manual, entitled "First Aid for Postal Employees." The book was prepared through cooperation with the U. S. Public Health Service, under the supervision of P. A. Surg. R. C. Williams. The manual has twenty-four pages. It is pocket size, and is one of the safest booklets of its kind thus far prepared for the public. The advice is invariably simple, cautious and limited to such measures as the ordinary person of average intelligence might very well understand. In addition, every postoffice throughout the United States has been furnished with a first-aid emergency chest, 115 large outfits going to the larger postoffices and 2,000 smaller outfits to the smaller offices and railway terminals.

Psychiatric Social Work.—Announcement is made of the organization of a section on psychiatric social work as a special section of the American Association of Hospital Social Workers. Graduates of recognized courses in psychiatric social work are eligible for membership after being employed for one year in social work in a hospital or dispensary. Without such special training, two years' service in psychiatric social work is required. The entrance requirement for the special courses at Smith College and the New York School of Social Work is education of college rank. The special course covers about two years and includes practical training in the field for at least nine months. It is hoped that these standards will be maintained. A curriculum was recommended by a committee, which worked during the year 1921-1922. The objects of the section are: (1) to promote association of psychiatric social workers, and (2) to promote standards of psychiatric social work. The next meeting will be held in conjunction with the Conference on Social Work in Washington, D. C., May 16-23. The officers of the section are: Mary C. Jarrett, Boston, president; Mary Ferguson, Philadelphia, vice president; Maida H. Solomon, Boston, secretary-treasurer. Inquiries should be addressed to Mrs. H. C. Solomon, 74 Fenwood Road, Boston.

The American Child Health Association.—The important personnel of the American Relief Administration have joined in a consolidation of the American Child Hygiene Association, and the Child Health Organization of America, in the formulation of a new voluntary agency for the advancement of child life, called the American Child Health Association. The American Relief Administration has volunteered to guide the executive effort of the new organization in its endeavor to provide funds to carry on its work. The officers of the new organization are Herbert Hoover, president; L. Emmet Holt, first vice president; Livingston Farrand, second vice president; Thomas D. Wood, third vice president, and Philip Van Ingen, secretary. The headquarters are at 532 Seventeenth Street N.W., Washington, D. C., and the administrative office at 370 Seventh Avenue, New York. The object of the organization is to use the great experience of the American Relief Administration in saving children to the advantage of American children, and to translate into facts the "Bill of Rights," stated by Mr. Hoover, its president: There should be no child in America who is not born under proper conditions; does not live in hygienic surroundings; ever suffers from malnutrition; does not have prompt and efficient medical inspection and attention, and does not receive primary instruction in the elements of hygiene and health.

Bequests and Donations.—The following bequests and donations have recently been announced:

University of Cincinnati College of Medicine and the Hospital of the Protestant Episcopal Church for Children, Cincinnati, each $250,000, under the will of Mrs. H. H. Taylor.

The residuary estate of Margaret Jeager, valued at approximately $100,000, to be divided among the following institutions: St. Vincent's Hospital, New York; Lenox Hill Hospital, St. Joseph's Home for the Aged, St. Joseph's Hospital for Consumptives, Lebanon Hospital, Wyckoff Heights Hospital, Brooklyn, Isabella Home, New York Foundling Hospital, Association for Improving the Condition of the Poor and the Society for the Relief of Ruptured and Crippled.

Epileptic Hospital, Oakbourne, Pa., and the Rush Hospital for Consumption, Philadelphia, each $10,000; Presbyterian Hospital, Philadelphia, $10,000, for free beds in memory of Jacob Y. Dietz and Eugene Santee; Children's Seashore Home, Atlantic City, N. J., the American Oncologic Hospital and the Lankenau Hospital, Philadelphia, each $5,000, under the will of Miss Mary E. Santee.

For a new hospital at Wakefield, Mass., $50,000, by an anonymous donor.

Servants for the Relief of Incurable Cancer, New York, $57,947, by the will of Mrs. Charles T. Klein.

Touro Infirmary, New Orleans, $25,000, by Harmony Club members.

St. Vincent's Hospital, Toledo, Ohio, $20,000, by the Rev. J. Berthelot of Tiffin.

St. Agnes Hospital, Fond-du-Lac, Wis., $10,000, by Dr. George W. Earle of Harmansville, Mich.

Sunset Home and Hospital, Concordia, Kan., a 160 acre farm valued at $20,000, by Olof Anderson.

St. Francis Hospital, Santa Barbara, Calif., $1,000, the result of a children's fete.

Burlington (N. J.) Hospital, $500, by the will of Mary A. L. Bishop.

Campaign to Improve Health of Indians.—A special campaign to eradicate trachoma and reduce tuberculosis among American Indians has been inaugurated by the Office of Indian Affairs of the Department of the Interior. Special instructions were sent out to all superintendents that physicians at the agencies and schools begin at once study of the symptoms and diagnosis of these diseases and immediately give treatment in every available case. In cases of trachoma, medical personnel are instructed to conduct systematic examinations of eyelids of Indians so that there will be no delay in giving treatment to those affected. Physicians on duty among the Indians are also urged to equip themselves professionally to do the expression operation for trachoma. The crusade against tuberculosis is to be vigorously pushed by health officials in the Indian Service. Special efforts are to be devoted to an early diagnosis of this disease, after which a carefully outlined routine of living and treatment is to be enforced. The instructions sent to superintendents stated that the past high tuberculosis death rate among Indians because of racial predisposition would no longer be considered a satisfactory explanation for increased morbidity from this source. A survey of the existence of simple and toxic goiter among the Indians of the United States has been started by the Department of the Interior. The census will be completed by the end of the month. Its purpose is to obtain data of historic and medical value, and Indian schools and agencies have been instructed to give early records regarding individual cases of goiter found among the various tribes.

The Standardization of Biologic Stains.—It is not generally realized that dyes used for biologic stains, in order to give constant results, must be of precise chemical composition, and that it is difficult for the chemist or biologist to control their composition. Before the war, all stains were imported from a single German firm, which did not manufacture stains, but bought textile dyes, and after preliminary testing bottled them and sold them under its own name to laboratories. The war deprived American laboratories of this source of stains, and after prewar stocks had given out, it was difficult to get stains of good quality. A cooperative investigation of American made dyes was arranged through the National Research

Council, among the members of several national societies. That work has been organized now under a special commission independent of the research council, but still representing the different national societies that were cooperating in the earlier work. At the meeting of the executive committee of this commission in New York, March 2, it was shown that stains available in America now are in practically all cases as good and sometimes better than the best of the prewar stains. The most important fact brought out at this meeting was that prewar stains were standardized only in an empiric way by the purchase of large quantities without knowledge of the exact composition of the dye, but they are now standardized on the basis of pure chemicals. In some cases, the impurities present in prewar stains were necessary. These impurities were other dyes and sometimes supposedly inert materials, such as dextrin. The task before the commission was to find what the impurity was that was responsible for the good staining qualities of the impure product, and then to demand that these impurities be present, as intentionally added ingredients. When this has been done, and the products are labeled, American stains will in truth become standardized. The commission will soon issue certifications of batches of stain that it has found satisfactory. These stains will be put on the market under a special label, bearing the name of the commission.

Peace Time Health Program of American Red Cross.—A health advisory committee of the American Red Cross, consisting of Drs. William H. Welch, Baltimore; Herman M. Biggs, New York; Thomas S. Cullen, Baltimore; Hugh S. Cumming, Washington, D. C.; Livingston Farrand, Ithaca, N. Y.; Franklin H. Martin, Chicago; Fred B. Lund, Boston; George M. Piersol, Philadelphia; John H. J. Upham, Columbus, Ohio, and C. E. A. Winslow, New Haven, Conn., was appointed in October, 1922. Its report was recently submitted to and approved by the Red Cross. The following policies concerning a peace time health program were endorsed by the committee:

1. The organization of classes in home hygiene and the care of the sick.
2. The organization of classes in nutrition.
3. The organization of classes in first aid and life saving.
4. The health phases of the Junior Red Cross program, such as (*a*) the development of personal health habits; (*b*) participation in a school health program, and (*c*) participation in community health programs.
5. The enrolment of properly qualified nurses under the division of nursing service.
6. The organized development of public health nursing in rural and semi-rural districts, through the activity of the division of public health nursing.
7. Assistance in the development and standardization of the training of public health nurses through loans, scholarships, subsidies and the like.
8. The development of machinery for the coordination at one central point of the work of various local health agencies.
9. Cooperation on a national scale with such organizations as the National Health Council for the purpose of furthering the coordination of voluntary public health activities.

The committee recommended that the home hygiene and nutrition work be extended by the organization of a health study group—for the consideration, first, of the principles of personal hygiene, and second, of local community health conditions and health needs; that it should be regarded as an essential principle by the Red Cross that all health work undertaken should be carried on only with the knowledge and approval of the state department of health and of the locally constituted health authorities of county, city or town; that in view of the intimate contact between a public health program of any type and the work of the medical profession, chapters should ask the local medical society or the local physicians as a group to nominate a physician of their own choice to act as their representative on the chapter executive committee or the committee on nursing activities. Judge John Barton Payne, chairman of the American Red Cross, announced that a director of health service will be chosen as soon as a suitable person can be found, and the recommendations of the committee put into effect.

LATIN AMERICA

Public Health Society in Brazil.—A Brazilian public health association was recently organized. Dr. Carlos Chagas is president and Dr. J. P. Fontenelle, secretary.

Brazilian Society Elects Officers.—The following officers were elected by the Medical and Surgical Society of Rio Janeiro: president, Prof. Fernando Magalhaes; vice president, Prof. Miguel Osorio de Almeida; secretary, Gen. Dr. Arnaldo de Moraes; speaker, Dr. Carlos Sá; treasurer, Dr. Custodio Fernandez; librarian, Dr. F. Catao; editor, Dr. Felicio Torres, and director of museum, Dr. Mario Góes.

Personal.—Dr. José Arce, professor of surgery at Buenos Aires, has been elected an honorary member of the Academia de medicina at Rome. At the same meeting, Drs. L. Lenzi and S. Marino of the Italian hospital at Buenos Aires were elected corresponding members.——Dr. S. Mazza, professor of bacteriology at Buenos Aires, has left for Europe, intending to study tropical diseases with Nicolle at Tunis, and malaria in France and Italy. He is one of the editors of the *Prensa Médica Argentina.*

Memorial to Carrion.—At the recent Latin American Medical Congress at Havana, a tribute was paid to Daniel A. Carrion of Lima, the young martyr to science in 1885 during research on Peruvian verruca and Oroya fever. The *Vida Nueva* endorses the suggestion made at the congress that each of the American republics should send a block of granite to Peru for a monument to Carrion, each block to be appropriately marked, and the whole to form a memorial shaft. Our exchange urges that prompt action be taken so that this commemoration will be an accomplished fact when the next Latin American congress meets in Mexico.

Nicaragua Wants a National Pharmacopeia.—The *Gaceta Médica de Nicaragua* contains a letter from Dr. Andrés Morin which presents data demonstrating the inconveniences and dangers of the present condition in Nicaragua without any standard pharmacopeia. The same drug purchased at different times in the same pharmacy may differ materially according as the manufacturing firms follow the French or United States or other pharmacopeia. The French Codex is the one that has been most in use, but the United States measurement by measure instead of weight is more convenient. The recent Latin American Medical Congress at Havana discussed the necessity for a Latin American pharmacopeia.

FOREIGN

New Spanish Journal.—Under the title *Clinica y Laboratorio,* a new monthly journal has begun publication at Saragossa, Spain. The editor is Dr. R. Horno Alcorta. The new journal is octavo size and contains an average of 100 pages and six original articles, with illustrations. The subscription price is 40 pesetas a year.

Medical Fees Increase in Portugal.—The Portuguese Medical Association, on account of the continuous increase in the cost of necessaries, has decided to raise its fee scale. In view of the fluctuations of Portuguese money, fees will be based on the 1914 prices of necessaries plus the proportional increase in these since that time.

Gift for Research Work.—Sir Alfred Yarrow of London has donated nearly $500,000 to the Royal Society for research work. The fund may be administered at the society's discretion, but Sir Alfred said: "I should prefer that the money be used to aid scientific workers by adequate payment, and by the supply of apparatus or other facilities rather than to erect costly buildings."

Italian Fund for Medal in Chemistry.—A committee has been appointed by the Italian Association of General and Applied Chemistry to arrange a celebration in honor of the seventy-fifth anniversary of Professor and Senator E. Paternó. The "Paternó medal" will be conferred annually to the author of the most important contribution to chemistry, regardless of nationality. Contributions to a fund for this purpose are welcome from the chemists of the world.

Institute for Medical Research of the Federated Malay States.—The *British Medical Journal* announces receipt of the annual report of the institute, compiled by Dr. William Feltcher, acting director of the government laboratories, in which it is stated that a special inquiry was made in cases of malaria described as "quinin resistant." Of forty-four such cases investigated, in only one was the condition uninfluenced by quinin. In one other case described as "relatively resistant," parasites persisted for a long time in spite of treatment.

Protection Against Injury from Roentgen Rays.—A conference was recently held at Berlin to discuss ways and means for better protection of roentgenologists and for workmen making the apparatus which they use. Professor Bumm presided, and a number of specialists and labor leaders joined in the discussion. It was unanimously decided that there is no necessity for legislative action in the matter, but a collective inquiry is planned. Questionnaires are to be sent to all the university clinics and large hospitals and to certain roentgenologists to collect data on the subject.

Rockefeller Mission Retires from Tuberculosis Work in France.—The *Presse médicale* relates that the Rockefeller Mission has completed five years of its active and *souveraine-*

ment bienfaisante propaganda against tuberculosis in France, and has handed over its services and its activities to the Comité national de défense contre la tuberculose. The seat of this is 66 rue Notre-Dame-des-Champs, Paris. It is in charge of M. Léon Bourgeois and of Professors Calmette and L. Bernard, and the work is to be carried on in the same way by lectures, motion pictures and other means.

New Medical Museum Journal.—The *Journal of Technical Methods* has recently been issued by the International Association of Medical Museums, replacing the series of bulletins, of which seven had been published. The first number is a memorial to Sir William Osler. It also contains articles on histologic technic used in pathology, and on preserving fluids for gross pathologic specimens, and a discussion on photomicrography. A function of the association is the establishment of an international system of exchange of museum specimens and pathologic material for microscopic research.

Fellowships for Research on Malaria.—The *Annali d'igiene* gives the details for competition for the two fellowships, of 12,000 liras each, offered by the Italian government for research on malaria. Among the themes suggested for special study are the development of malaria in regions with few mosquitoes; the biology of mosquitoes; their range of flight; the incidence of malaria before the mosquito season; relations between malaria and domestic animals; the water plants which promote or check proliferation of mosquitoes; other larvacidal measures, and means to enhance immunity and protect workers in the fields.

Good Advice for Physicians and Patients.—Under this heading, the *Nederlandsch Tijdschrift* reproduces two articles from THE JOURNAL of Jan. 6, 1923. One was entitled "Some Sound Financial Advice for Physicians and Medical Advice for Laymen," page 53. The other was "The Problems of Personal Medical Advertising," page 56. Our Netherlands exchange comments appreciatively on both, remarking in conclusion, "It will be a difficult task for the American Medical Association to root out such inveterate and insidious evils as the trend to vulgar commercialism. The fine results of its fight against nostrums encourages the hope that it will succeed."

Deaths in Other Countries

Dr. **Henrique Souza Lopes,** formerly professor of toxicology and materia medica at Rio de Janeiro, and author of numerous works on these specialties.——Dr. **L. Langieri** of Buenos Aires.——Dr. **H. Monnier** of Montreux, aged 75.——Dr. **A. Dumur** of Evian, aged 70.——Dr. **H. Bickel,** privatdozent for neurology at Halle.——Dr. **Julián Fuentes** and Dr. **Joaquín González Hidalgo,** both of Madrid.——Dr. **Georges Perrochaud,** intern at Paris, succumbed to fulminating scarlet fever contracted in his hospital service.——Dr. **J. Vitrac** of Pau, professor emeritus of surgery at the Bordeaux medical school.——Dr. **W. P. Purvis,** senior surgeon to the Southampton Hospital, England.——Dr. **Patrick Muldoon** was shot and killed by rebels at Mohill, Ireland, March 18.

Government Services

Hospital Trains Authorized

Pursuant to the instruction of the Secretary of War, the organization of the following hospital trains, organized reserves, has been authorized: Hospital Train No. 46 (Illinois); No. 63 (Arkansas); No. 10 (Illinois); No. 9 (Virginia); No. 68 (Indiana); No. 54 (Kentucky); No. 7 (Pennsylvania); No. 48 (Oklahoma); No. 66 (Arkansas); No. 40 (New Jersey); No. 17 (New York), and No. 8 (New York).

Hospitals Authorized

Pursuant to instructions of the Secretary of War, the organization of General Hospital No. 1 Organized Reserves (Bellevue Hospital Unit, New York City); of Evacuation Hospital No. 2 (St. Luke's Hospital Unit, New York City), and of Evacuation Hospital No. 25 (West Suburban Hospital Unit, Melrose Park, Ill.), has been authorized. Organization of the following hospitals, organized reserves, at the Western Reserve University School of Medicine, Cleveland, has been authorized: General Hospital No. 4 (Lakeside Hospital Unit); General Hospital No. 57 (City Hospital Unit), and Surgical Hospital No. 5 (St. Vincent's Charity Hospital Unit). The organization of a veterinary convalescent hospital, organized reserves, to be known as Veterinary Convalescent Hospital No. 1 (a second corps area unit), has also been authorized.

Instruction in Treatment of Pulmonary Tuberculosis

Physicians in the U. S. Veterans' Bureau service who have completed the preliminary course in treatment of tuberculosis are eligible to attend the graduate course now being given, and to be repeated at intervals, at Veterans' Hospital No. 41, New Haven, Conn., and at Fitzsimons General Hospital, Denver, Colo. These schools opened March 1 and 5, respectively. The chief instructor of the New Haven school is Dr. Nathan Barlow of the U. S. Public Health Service. The Denver school is in charge of Major E. H. Bruns, M. C., U. S. Army, chief of the medical service. The instructors in the New Haven course include not only tuberculosis specialists connected with the U. S. Public Health Service and the U. S. Veterans' Bureau, but the following specialists not in the bureau service: Drs. Yandell Henderson, F. G. Blake, J. S. Ely, H. B. Ferris, H. W. Haggard, E. K. Hunt, A. M. R. Lauder, C. A. E. Winslow and M. C. Winternitz, dean, from Yale University Medical School; Col. G. E. Bushnell, Bedford, Mass.; Drs. Roy Adams, Washington, D. C.; H. K. Dunham, Cincinnati; George Fetterolf and Thomas McCrae, Philadelphia; A. K. Krause, Johns Hopkins Hospital, Baltimore; D. R. Lyman, New Haven, Conn.; Edgar Mayer, Saranac Lake, N. Y.; W. S. Miller, Madison, Wis.; E. L. Opie, Washington University, St. Louis; J. H. Pratt, Boston, and Asst. Surg.-Gen. F. C. Smith, U. S. Public Health Service, Washington, D. C.

Assistant instructors in the New Haven school from the bureau service are: Acting Asst. Surg. L. G. Beardsley, Surg. E. P. Bledsoe and P. A. Surg. Karl Schaffle.

Those not in the bureau service who will assist in the instruction at Denver are: Drs. A. M. Forster, C. F. Gardner and Gerald Webb, of Colorado Springs, Colo., and Drs. W. H. Bergtold, C. E. Edson, Leonard Freeman, J. N. Hall, C. B. Ingraham, Robert Levy, A. J. Markley and H. F. Pershing, of Denver.

These courses are thorough and will last at least two months in each school. The general supervision of both the preliminary and the graduate courses is in charge of the clinical director of tuberculosis in the central office of the bureau, Washington, D. C.

Successful Candidates for Navy Medical Corps

The following physicians have recently been examined and found physically and professionally qualified for appointment in the grade of assistant surgeon, rank of lieutenant (jg), in the medical corps of the Navy: J. E. Root, Jr., Temple, Texas; R. E. Avery, Barre, Vt.; J. F. Hays and J. M. Brewster, Philadelphia; E. S. McRoberts, Indianapolis, and J. J. Markey and J. D. Viecelli, Denver.

Internships in Army Hospitals

The medical department of the Army will accept for internship in its large general hospitals graduates of class "A" medical schools of this year's graduating class who have the endorsement of the faculty of their school for commission in the medical corps of the Regular Army, and who are physically qualified for service. There is no mental examination for these appointments. Interns who satisfactorily complete one year's internship under these conditions will be commissioned, if they so elect, without further examination, other than physical, in the medical corps of the Regular Army. The pay of an intern is $60 a month, with rations, quarters, necessary traveling expenses and medical attendance.

United States General Hospitals at which these interns will be placed, include:

	Beds
Walter Reed General Hospital, Washington, D. C.	1,000
Fitzsimons General Hospital, Denver	1,500
Beaumont General Hospital, El Paso, Texas	300
Letterman General Hospital, San Francisco	500
State Hospital, Sam Houston, San Antonio, Texas	400

Foreign Letters

LONDON

(From Our Regular Correspondent)

Feb. 26, 1923.

The Hunterian Oration

The hunterian oration in memory of John Hunter was delivered at the College of Surgeons, February 14, the anniversary of his birth in 1728. The college houses the hunterian collection, which under successive curators has become the greatest pathologic museum in the world, and may be regarded as a temple erected to the memory of the founder of scientific surgery. This year the oration was delivered by Sir John Bland-Sutton. The choice could have fallen to no one better fitted for the task. He alone among English surgeons has followed the hunterian tradition of studying all forms of life, normal as well as abnormal. A distinguished audience including Rudyard Kipling, listened with rapt attention to the address, "John Hunter, His Affairs, Habits and Opinions," by this master, whose enthusiasm for his subject was equaled only by his knowledge. He gave a vivid sketch of the most important events in Hunter's life, and showed the bearing of his work on many present-day questions. The oration glistened with aphorisms: "For Hunter, morphology was a gleam in the intellectual sky. We revel in the sunshine. Morphology has become the soul of anatomy. . . . The hall in the museum that enshrines Hunter's statue is a temple of pathology. . . . The essential work in Hunter's life was the useful specimens he prepared and left for successors. These specimens, safeguarded by faithful Clift, catalogued by sagacious Owen and Paget, and such able curators as Flower and Shattock, are now in the care of Keith, who lacks none of Hunter's enthusiasm, but totally eclipses him in the art of exposition."

At the banquet that followed, Kipling proposed the health of the hunterian orator in a characteristic whimsical and philosophic speech. He described man as "the hunter of truth," and exhorted his audience to "consider for a moment the poor brute's position. You all know the common formula for him: 'Born of woman, on woman designed to beget his life—the natural quarry of the seven deadly sins, but the altar of an inextinguishable hope'; or more scientifically [I regret I am not a scientific person] he might be defined as 'an imperfectly denatured animal intermittently subject to the unpredicable reactions of an unlocated spiritual area.' The priest and the law giver have probed and fished for it all through the ages; but more than any other the leech, the medicine man, the healer has been hottest on its track. In the teeth of the outrageous, the absurd disabilities imposed on him, man, the imperfectly denatured animal, who cannot trust the evidence of his own senses in the simplest matter of fact; whose evidence on the simplest matter is colored by his own iniquities; man, always the hunter, went up against the darkness that cloaked him, to find what order of created being he might be. It was the old quest under a new name. But this time the seekers, unlike the priest and the lawyer, admitted that they knew very little. Experience had taught them to be very humble. For that reason their knowledge was increased."

The Medical Work of the Ministry of Pensions

In reply to criticism in the House of Commons, the minister of pensions gave some particulars of the medical work. Since the armistice the ministry has spent more than $300,000,000 on medical treatment of the sick and wounded, and on allowances for the men and their families. A large proportion of the patients have been restored to health. At present the ministry is responsible for 25,000 patients in hospital. Of these, 12,000 are in hospitals owned, manned and managed exclusively by the ministry. A daily average of 80,000 attend as outpatients at hospitals or clinics, of whom the larger number attend clinics owned, manned and exclusively controlled by the ministry. It is the aim of the ministry's medical service to supply medical attention as long as there is the slightest chance of materially improving the men's condition. The treatment of ex-service men suffering from nerve or brain trouble is constantly under discussion between the minister and representatives of the men. The ministry has fourteen neurologic hospitals and a large number of neurologic clinics. Much criticism has been directed against the ministry for allowing men rendered insane by the war to be treated in ordinary asylums. The ministry is about to start the experiment of making separate arrangements for the treatment of cases of a hopeful type.

The Supply of Insulin

Insulin is now being used in London at St. Bartholomew's, Guy's, St. Thomas's, the London, and University College hospitals; in Sheffield, at the university departments of pharmacology and physiology, and at the royal infirmary, and in Edinburgh at the royal infirmary. Arrangements are being made to extend the work to other hospitals and institutions where the necessary conditions, both personal and material, can be provided. Every effort is being made to increase the supply of insulin so that it may be available in general practice. Progress toward large-scale production has been more rapid than was expected. Subject to limitations of raw material in particular districts, successful manufacture is now considered assured. But a period of some weeks must elapse before laboratory tests and clinical use under special safeguards will have made it justifiable for a supply to be issued generally for routine use under ordinary conditions of medical practice. This is a wise provision, for insulin is a powerful remedy and its use in the hands of experts has on some occasions given rise to anxiety.

The Sphalinger Treatment of Tuberculosis

As stated in previous letters, the ministry of health has taken up a noncommital attitude when requested to support the Sphalinger treatment of tuberculosis. Persistent efforts are being made in the press to boom the treatment, but without success. Readers are assured on the authority of "an eminent physician" (who prefers to remain anonymous) that the treatment is valuable. "The serums and vaccines, which are the fruit of years of research, have cured even advanced cases. Three or four years are required for their preparation, and great expense is involved. Sphalinger has so impoverished himself by his magnificent work that he cannot go on without substantial help. He will not publish his formula because he knows very well that unauthorized persons would exploit it, with the result that the method would be discredited. All our present methods of inoculation will have to be revised on the basis of the principles underlying his work. To remove immediate embarrassment and establish an institute in this country, some $500,000 is required." An appeal is being made for subscriptions, but it does not seem likely to produce much result.

Women Physicians Demand Equal Pay With Men

The Medical Women's Federation has sent a letter to the postmaster general asking him to consider the existing inequality of pay between men and women physicians on the staff of the general post office. At present all the women physicians receive a salary of from $1,250 to $2,000 with a bonus, as against from $1,500 to $2,500 for men. The federation lays stress on the fact that medical women receive exactly the same training as men, and also are capable of doing, and actually do, exactly similar work, and undertake

the same responsibilities. It also adds that inequality of payment will tend to prevent the better qualified and more experienced women from offering themselves for appointment.

Chair of Animal Pathology at Cambridge

The senate of the University of Cambridge has accepted the offer of the ministry of agriculture of $150,000 to found a professorship of animal pathology. This is the first step toward the creation of an institute for research in the pathology of animal diseases. The first duty of the professor will be to prepare plans, and it is understood that the government departments concerned are prepared to consider schemes involving a total expenditure, on buildings, staff and upkeep of $500,000 in the next four years. After that the financing of the institute will depend on circumstances. Headquarters will be in an extension of the school of agriculture, where the new professor will have the assistance of Prof. T. B. Wood and Prof. R. H. Biffen, among others, who will aid him in directing the work along agricultural lines. His windows will look into the new biochemical laboratory that is being built for Prof. F. G. Hopkins. A few yards away is the Molteno Institute, where Prof. F. G. Nutall pursues his studies in parasitology. The university medical school also is adjacent. The necessary paddocks, stables and animal houses will be provided at the field laboratories just outside the town. Thus, there is every facility for coordinating the new institute with all the allied departments of the university.

PARIS

(From Our Regular Correspondent)

Feb. 23, 1923.

Can Sports Regenerate the Human Race?

It has been frequently assumed that participation in sport, if it became more general, would preserve the human race from physical degeneration; but in recent examinations of draftees, those who were in the habit of engaging in sport activities were not found to be better built or more robust than the others. On the contrary, a large proportion of the devotees of sport were assigned to the deferred class, on account of poor physical development or disturbed heart action. It would seem, therefore, that we have greatly deceived ourselves, when, reacting against the gymnastics of the school and the army, we have maintained that sport and athletics would provide adequate physical training for children and adolescents. Dr. Ruffier, who has for many years studied the problems of physical education, analyzes the causes of this deception. What gives, he says, a special character to the exercise obtained in sport activities is the spirit of competition—the struggle between competitors who are endeavoring to defeat each other. This is, moreover, the view that young people take of sport. Their youthful enthusiasm, their pride, their desire to measure their strength against their fellows, lead them to take part in foot races, bicycle races, boxing matches and football, in which they find an opportunity of asserting their physical superiority. That is exactly why sport is bad for them and why its effect is absolutely nil as far as the regeneration of the race is concerned. Sport may be regarded only as a pleasing means by which those who are strong of muscle can exhibit their great physical qualities. On the other hand, sport can only be the cause of exhaustion, or at least an arrest of development, for children and weak adolescents. In order that a future champion in the Olympic contests may be discovered in a crowd of young men, just think how many must be overtrained. Another disadvantage is that many, too easily convinced of their physical inferiority, abandon exercise in all its forms. The main thing, then, is not to train weaklings so that they may become distinguished for their prowess in sport, but to base physical education in the schools and colleges on gymnastics tending toward an all round physical development.

The Abuse of Morphin in Chronic Affections

Dr. Maurice Renaud recently called the attention of the Société médicale des hôpitaux of Paris to the misuse of morphin injections in chronic diseases. Renaud is physician to the old people's home at Brévannes, where also a number of hospital patients affected with incurable chronic diseases are admitted. When Renaud took up his work in this service, he found thirty patients, to whom 250 injections of morphin were being given every day. These patients were suffering from tabes, paraplegia, diseases of the stomach, rheumatism and cancer, and their condition was extremely pitiful. Renaud soon became convinced that this abuse of morphin was to a greater extent responsible for their sad condition than was the affection on account of which they had become morphin addicts.

As he studied these morphin addicts, it became apparent that the use of morphin did not make it easier for them to bear the discomforts of chronic diseases, nor did it alleviate any of their symptoms; for, as is well known, morphin is a sovereign remedy only in acute and paroxysmal pain, and, on the other hand, suppresses the marvelous capacity of the human organism to become resigned to most abominable situations. The use of morphin in these cases, therefore, defeats its own end. Instead of producing mental repose, it creates a state of constant irritability, for the patient comes to await, in a state of constant anxiety, the next injection.

On discontinuing entirely the use of morphin, Renaud noted an improvement in all patients. Some of them who were not affected with any serious disease and whose condition had not become grave by reason of their morphinomania became normal as soon as the intoxication was suppressed.

Renaud concludes from these facts that the injection of morphin should be an exceptional form of medication, since the benefits are only transient, and deplorable symptoms result if it is prolonged more than a few days. It should be reserved for the relief of pain in crises or for the alleviation of agony.

Honor Loans for Students

Utilizing a gift of 100,000 francs from Mme. Nathan, a trial of the honor loan system, on a rather extensive basis, has been inaugurated by the University of Paris. In accordance with the expressed will of the donor, twenty loans of 5,000 francs each are to be allotted. During the month of January, applications from students were received and inquired into. The committee of the Société des amis of the University of Paris, which has been designated by the rector of the university as the body to decide on applications, has proceeded with the allocation of the loans, and has established the rule that they must be repaid within fifteen years.

An Ovation to Dr. Vaillant

The municipality of Paris recently tendered, at a special session of the municipal council, an ovation to the roentgenologist Charles Vaillant, who, after numerous partial operations on his fingers, hand and shoulder, has paid with the loss of both arms for his untiring devotion. Many distinguished persons were present at this meeting, including Hon. Myron T. Herrick, American ambassador; M. Strauss, minister of public health; Professor Roger, dean of the Faculté de médecine, and members of the Carnegie Foundation. Dr. Vaillant was requested to sign in the *Livre d'or* the official report of his reception. This was a pathetic scene; for, in order to accomplish this act, our crippled confrère had to use an apparatus fitted to the right arm

stump. Vaillant was then conducted to the reception room, where he was given a seat opposite the platform, with the American ambassador on his right and M. Paul Strauss at the left. Behind him sat his wife and daughter and Mme. Leray, widow of Dr. Leray, who was the director of the roentgenologic laboratory of the Saint-Antoine Hospital for twenty-five years, and who died in 1921, the victim of his devotion to a worthy cause.

Several addresses were delivered, paying respects to Dr. Vaillant and to the memory of Dr. Leray. The American ambassador gave an address as the representative of the Carnegie Foundation, and to Dr. Vaillant and to Mme. Leray he handed a letter of felicitation from M. Loubet, former president of the republic and head of the Carnegie Foundation in France. Dr. Vaillant replied in a few fitting words in which he spoke of the early development of roentgenology.

Medical Fees and the State Treasury

The finance committee of the chamber of deputies has recently passed an order requiring members of the so-called liberal professions to keep a record of payments made to them in remuneration of their services. The fees received by physicians must be recorded, together with the date of payment. On demand, this record must be placed at the disposal of the controller of direct taxes. Likewise, all those who have made the payments must make a memorandum of the fact in a special journal, which must also be open for the inspection of the controller. Aroused by this decision, a syndicate of the physicians of the department of the Seine at its last meeting adopted the following resolution:

For the reasons stated below, the syndicate protests vigorously against the lack of confidence shown in the medical profession, which has never sought to escape the obligation of paying its full amount of taxes, and against the proposed method of recording payments, to be controlled by a government official on the basis of entries made by the clients themselves:

1. This system, no matter what precautions were taken, would be sure to result in the violation of professional secrecy, which is the basis of our fundamental rights and a safeguard of the patients.
2. It would not be long before it would develop a spirit of denunciation, which is considered in France, and rightly so, as the lowest of human qualities. It would soon result in calumnious charges from which the most upright physician would not emerge unscathed.
3. It would consequently decrease the general respect in which physicians are held, and the respect of one's patients is an indispensable asset for physicians if they are to fulfil their important duties.
4. It would reduce the medical profession to a commercial calling, which is contrary to law.

Pensions for the War Disabled

Dr. J. Gourdon, who is in charge of industrial reeducation at the Faculté de médecine of Bordeaux and director of the Ecole normale for the industrial reeducation of cripples in the same city, presented a communication to the Academy of Medicine, in which he endeavored to show that the economic efficiency of those pensioned on account of illness is less than that of the mutilated or crippled. Of the former, there are 28 per cent. who are unable to work, while of the latter only 3 per cent. are in that category. The economic efficiency of those granted disability for illness is 75 per cent., whereas the cripples are able to earn 90 per cent. of a normal salary. In order to make up for this inequality in industrial capacity, Gourdon proposed that an increased percentage of disability be granted those ex-service men whose physical activity is seriously diminished. He recommended also that centers of industrial reeducation especially adapted for such men be established, and finally that a large number of administrative positions under the state be reserved for their benefit.

This proposal has called forth a storm of protest from a number of physicians and surgeons whose duty it is to estimate the percentage of disability of those claiming pensions, for they have been able to show that many sick persons pensioned on account of war service were never in the army, and that their ailments (tuberculosis, deformities, eye affections, mental disorders) were in no wise due to consequences growing out of the war. For instance, Professor Jeanbrau of Montpellier says that of a hundred pensioners whom he examined, ninety-five were granted disability claims on account of illness, yet some of them never served in the army. Thousands of men, it is said, have been pensioned for illness acquired in the army without being subjected to an adequate examination. Therefore, an increase of the percentage of disability, except in a few specific cases, to be particularly determined, would be an injustice and a crushing load on the budget.

In view of this controversy on such an important question, the Academy of Medicine, at the suggestion of the president, Professor Chauffard, has appointed a committee, consisting of Professors Gley, Balthazard, Léon Bernard and Hartmann, and Dr. Sieur of the army medical corps, to inquire into the matter.

The Fight Against Cancer

The regional organization of the fight against cancer, as recommended by Professor Bergonié of Bordeaux (THE JOURNAL, Aug. 26, 1922, p. 753), seems about to be realized. A few days ago, M. Paul Strauss, minister of public health, inaugurated at Bordeaux the first regional center to carry on the fight against cancer. M. Strauss visited the various services of this anticancer center, which is furnished with the most modern equipment. The minister, on this occasion, bestowed on Professor Bergonié the gold medal of the Carnegie Foundation.

MADRID

(From Our Regular Correspondent)

Jan. 18, 1923.

Address by Neumann on the Pathology of the Ear

At a joint session of the Madrid Medical Society and the Spanish Society of Otologists, Professor Neumann of Vienna delivered an address on general and anatomic pathology of the internal ear, especially the labyrinth. He pointed out that arteriosclerosis may act either diffusely by causing a general intoxication or locally on the vestibular nerve. He also presented pathologic specimens from cases of arteriosclerosis in which tinnitus has been the initial complaint. Tinnitus resulting from change of posture is characteristic of arteriosclerosis, ringing in the ears in the neuroses appearing usually when the patient is tired. In another specimen, there was enormous dilatation of the saccule as the result of retention of secretion through inflammation and ossification of the septum. These conditions indicate a low grade inflammation, as severe labyrinthitis would cause destruction instead of ossification. The organism of epidemic cerebrospinal meningitis shows an affinity for the endolymph, and causes inflammation with a fibrinoplastic exudate that results in the formation of scars and bands.

Ossification of the vestibulocochlear septum is rather frequent. Suppurative labyrinthitis may be severe or mild, a defensive granuloma developing only in the latter case. The only differential sign is the rapidity of destruction of the internal ear. Lumbar puncture should never be omitted. In many cases, an increase in the number of cells and increase of albumin will be found in the cerebrospinal fluid, indicating that the process is not localized to the labyrinth. In many cases of death after operation, the surgeon is blamed for spreading the infection from the ear to the meninges; but abnormality of the spinal fluid, detected before operation, proves that extension had already occurred.

Neumann described a case, probably unique, of serofibrinous labyrinthitis in a patient who killed himself two hours after

the onset of the first symptom. The pathologic specimen was therefore obtained at a very early stage of the process. The patient had become deaf in one ear many years before, and suddenly, while eating, he became deaf in the other ear. He rushed to see Neumann, who found that he was totally deaf. The examination was hardly over when the patient killed himself. At necropsy, the diagnosis of serofibrinous labyrinthitis was confirmed. The nature of the exudate explains the diverse responses to different tests.

Otosclerosis remains as much a problem as when first studied by Politzer. Neumann showed specimens from cases of progressive deafness, and pointed out that the majority of cases diagnosed as otosclerosis are not such. A specimen which attracted much attention was a neurofibroma from the internal auditory meatus. In neurofibromatosis of the vestibular portion of the nerve, dizziness is the first symptom, total deafness appearing later. The prognosis in growths of the acoustic nerve is serious, as the roentgen rays cannot detect them during the operable stage.

Other specimens exhibited were congenital malformations, which are very rare in the internal ear. One was a case of Mondini's deformity in a patient who was able to hear a little. One specimen demonstrated the possibility of developing intra-uterine suppurative labyrinthitis, and its spontaneous healing, also in utero. The case occurred in a maternity home, and the child died at birth.

Neumann recalled that a few years ago all otologists were interested in nystagmus; today the principal topic is tinnitus aurium, about which little is known. Otologists should try to throw light on this troublesome complaint. Specimens exhibited led to a discussion of neuronophagia. In one section, the auditory cells exhibited protoplasmic changes; in another, there was hyperplasia of the interstitial tissue between the ganglion cells; a third specimen showed only interstitial tissue, the ganglionic tissue having disappeared. These specimens explain some of the possibilities in tinnitus aurium: buzzing in the ears without deafness; deafness without buzzing, and buzzing preceding or following deafness.

The Society of Otologists appointed Professor Neumann an honorary member. A few days before, the Royal Academy of Medicine had appointed him a corresponding member of the academy.

Anoxemia from Intoxication

Dr. Carracido, professor of biologic chemistry in the school of pharmacy, and president of the Central University, gave a lecture on anoxemia. It is well known that no form of life can exist without oxygen; even anaerobes absorb it in certain combinations. The quantity of oxygen necessary varies for each species. The higher the animal in the zoologic scale, the more oxygen is required, and special organs have been developed to accumulate it. The human organism has about 5 liters of oxygen in solution in its plasma, but more is needed; hence the presence of red cells, whose function is to store oxygen.

According to one theory, carbon monoxid forms a more stable combination with hemoglobin than does oxygen. Carbon monoxid poisoning is then explained by the replacement of oxygen by carbon monoxid, with consequent anoxemia. Carracido does not accept this explanation, as in such cases the proportion of carbon monoxid which replaces oxygen is very small. Oxyhemoglobin still forms more than 90 per cent. of the total. Dr. Carracido attributes the poisoning to catalysis of oxygenated compounds of the blood.

The most characteristic feature of biologic combinations and reactions is their extreme delicacy. Thus, sugar burns completely in the body at body temperature, while outside the organism temperatures incompatible with life are required for the same purpose. This vital combustion is brought about through the presence of catalyzers. These bodies are extraordinarily sensitive. There are substances which, even in infinitesimal amounts, paralyze the catalyzers, and this explains why carbon monoxid and sulphureted hydrogen interfere with the catalysis. Carracido, therefore, explains anoxemia, as the result, not of the substitution of carboxyhemoglobin for oxyhemoglobin, but of the insufficiency of the plasmatic oxygen for maintenance of cell life. Carboxyhemoglobin, sulphohemoglobin, and similar substances prevent the catalyzers from furnishing the necessary surplus from the combined oxygen.

Dr. Carracido also called attention to other anoxemic phenomena. Oxyhemoglobin decomposes at a certain temperature, while methemoglobin, an isomeric combination, is inert. Methemoglobin may be produced outside the body by such substances as potassium ferrocyanid. The same transformation may be brought about in the body by the action of many hypnotics and analgesics. Many a person has died from taking sedatives advertised in the newspapers. While death is attributed to nervous accidents, the nervous system is not at fault; it is only the first system to suffer from lack of oxygen.

Transformation into methemoglobin becomes slower with increasing alkalinity; hence, the greater change in cases of acidosis. No methemoglobin is produced when potassium ferrocyanid is injected into an animal because this salt does not dissolve in the cell constituents. But some drugs, such as phenacetin, which do not produce methemoglobin in vitro, may do so in vivo; hence, the danger of using such drugs. Certain toxins, such as that of diphtheria, also cause methemoglobinization. Methemoglobin is dead oxyhemoglobin. It may be brought back to life by being reduced to hemoglobin, which will then become oxyhemoglobin. This transformation is brought about by reducing substances that abound in the body.

BERLIN

(From Our Regular Correspondent)

Feb. 15, 1923.

Death of Professor Roentgen

Professor Roentgen, the famous discoverer of roentgen rays, died in Munich, March 10, at the age of 77. The importance of his discovery for science in general, and in medicine in particular, needs no elucidation. In America especially, important progress in this field, as regards both theory and practice, has been made. In December, 1895, the first roentgenogram exemplifying the significance of the roentgen ray in the field of medicine was demonstrated in connection with internal medicine by the late neurologist Jastrowitz of Berlin.

Cocainism

At the last session of the Berliner medizinische Gesellschaft, the abuse of cocain, especially the method of snuffing it up the nose, was discussed by several speakers, and means were considered as to how this dangerous practice can best be combated. In Germany, the snuffing of cocain did not become widespread until after the war. The commonly assigned causes for this are: a desire to gain relief from the sufferings of the war by the use of narcotics, and secondly, an endeavor to find a substitute for alcohol. Cocain "snuff" may be procured at bars, in low dives, and even on the street, a pinch costing at the present time from 400 to 600 marks. The habit of using cocain snuff seems to spread more rapidly than the injection method, which is usually carried out in one's private apartments. The toxic effect of cocain when snuffed is less than when injected. The dosage producing euphoria is further removed from the toxic dosage than is the case in injections of cocain. Nor are degenerative effects observed so soon. For the most part, irrespon-

sible, psychopathic persons take up with this vicious habit; especially prostitutes, who are usually at the same time alcohol addicts. Cocain addicts have their special resorts throughout the city, where restaurant keepers, waiters and women (especially those in charge of public comfort stations) sell the cocain powder. They also have a type of low doggerel verse. With his watch and pocket mirror in his hand, the "snuffer" eagerly awaits the onset of the euphoria and the pleasurable day dreams. When the effect begins to abate, he takes another pinch. Cocain snuffers can often go several days without feeling the need of sleep. Finally, a hallucinatory stage follows, which is attended by excitability, fear states, and delusions of persecution, which give rise to malicious resistance. The snuffing of cocain causes a characteristic distortion of the nose, while the formation of small ulcers within bring about the perforation of the nasal septum, which, however, as Professor von Eicken pointed out in his discussion, may be observed in other intoxications, especially among workers in chromium. The prognosis for cocain addicts is more favorable than for morphin addicts, since a complete metamorphosis of the organism does not occur, nor are there marked withdrawal symptoms when the amount taken is gradually reduced. If the habit is not broken up, bodily and mental degeneration and premature death are the result. In order to effect a permanent cure, it is very desirable that a patient be separated from his old environment, for otherwise he is liable to relapse. Cocain is often procured by patients deceiving their physician. Often cocain is dispensed by pharmacists for the reason that the prescription of the physician did not state that it should not be refilled. Pharmacists are also frequently deceived by counterfeited prescriptions. The method of controlling the sale of opium as established by international agreement does not apply to pharmacists. Dr. Joel thinks that the situation would be much improved if pharmacists would dispense cocain only to physicians well known to them. Since physicians themselves are restricting their use of cocain more and more and are employing substitutes instead, regulation of the amount manufactured or imported might be established. Professor Hahn, the hygienist, of Berlin, who estimates the number of cocain snuffers in Berlin as from 5,000 to 6,000 (in the other large cities of Germany the habit is, as yet, not so widespread), demands the cooperation of physicians and legislative enactments to curb this evil, which, owing to the form of proselytism adopted, spreads like an infectious disease. He holds that the government should adopt such a definite policy as will prevent the less harmful stimulants, such as tea, coffee and beer, from becoming so high in price that cocain comes to be substituted for them. Professor Anselmino and Professor Rost, both connected with the central public health office, discussed the measures that the administration had applied thus far with a view to checking the spread of this evil.

Marriages

EDWARD WHEELER WILDER, Boston, to Miss Harriet M. Wyman of Lincoln, Neb., at Madura, India, January 15.

MALCOLM MOONEY NEEL, Geiger, Ala., to Miss Martha Mae Dillard of Atlanta, Ga., February 22.

WILLIAM ARTIS DAWSON to Miss Harriette Marie Reder, both of Chicago, December 31.

FRANKLIN W. SELLS, Osceola, Iowa, to Miss Clara Beck of Los Angeles, February 1.

JOHN M. OGLESBY, Alexandria, La., to Miss Angela Leake of New Orleans, recently.

OLGA MCNEILE to Mr. Frederick W. Robinson, both of Los Angeles, February 2.

Deaths

Walker Gill Wylie ⊕ New York; Bellevue Hospital Medical College, New York, 1871; died, March 13, of pneumonia, contributary cause arteriosclerosis. Dr. Wylie was born in Chester, S. C., in 1848. Following graduation from the University of South Carolina, he served throughout the Civil War. After graduating from Bellevue Hospital he went abroad to study the Nightingale system, and returning established the first training school for nurses at Bellevue. Dr. Wylie served at Bellevue for twenty-five years as gynecologist. He was appointed professor of gynecology at the New York Polyclinic Medical School, in 1882, and was recently made professor emeritus. In 1876 he wrote "Hospitals, Their Organization and Construction," for which he received the Boylston prize essay from Harvard Medical School. Dr. Wylie was a member of the New York Obstetrical Society, the New York Pathological Society, the British Gynecological Society, and the Royal Society of Medicine of London.

Nelson Herrick Henry, New York; Columbia University College of Physicians and Surgeons, New York, 1879; member of the New York House of Representatives; formerly adjutant-general of the state and surveyor of the port of New York; veteran of the Spanish-American War; major general of the M. C., N. G. New York; member of the New York Academy of Medicine and of the Society of Foreign Wars; aged 67; died, March 16, of cerebral hemorrhage.

Burton Seymour Harris ⊕ Brooklyn; Columbia University College of Physicians and Surgeons, New York, 1904; for four years secretary of the Kings County Medical Society; member of the American Urological Association, and the Brooklyn Pathological Society; on the staff of the Wyckoff Heights Hospital; aged 39; died, March 5, of epidemic (lethargic) encephalitis, following influenza.

May Michael ⊕ Chicago; Northwestern University Woman's Medical School, Chicago, 1898; member of the Chicago, and the Central States pediatric societies; attending physician to the Chicago Home for Jewish Orphans, on the staff of the Cook County Hospital, the Mary Thompson Hospital and the Chicago-Winfield Tuberculosis Sanatorium, Winfield; aged 47; died, March 15, of pneumonia.

Carlyle Edgar Sutphen, Newark, N. J.; Columbia University College of Physicians and Surgeons, New York, 1896; member of the Medical Society of New Jersey; formerly acting medical director of the Newark City Hospital; served in the M. C., U. S. Army, during the World War; aged 51; died, March 7, at the Mayo Clinic, Rochester, Minn., of pneumonia, following an operation.

William Caspari, Jr. ⊕ Baltimore; Baltimore Medical College, 1902; formerly associate professor of materia medica and pharmacy at the University of Maryland School of Medicine and the College of Physicians and Surgeons; on the staffs of the Maryland General and the Franklin Square hospitals; aged 61; died, February 13, of angina pectoris.

Thomas Oscar Edgar ⊕ Dixon, Ill.; Northwestern University Medical School, Chicago, 1907; member of the American Academy of Ophthalmology and Oto-Laryngology, the American Laryngological, Rhinological and Otological Society and the Chicago Ophthalmological Society; aged 51; died, March 5, of bronchopneumonia.

James Parton Haney, New York; Medical Department of Columbia College, New York, 1892; formerly president of the Council of Supervisors of Manual Arts and director of arts at the New York University Summer School; lecturer, New York University School of Pedagogy, 1895-1899; aged 52; died, March 3, of pneumonia.

William Scott Lawrence, New York; Beaumont Hospital Medical College, St. Louis, 1901; served in the M. C., U. S. Army, during the World War; acting assistant surgeon in the U. S. Public Health Service; formerly chief diagnostician for the St. Louis Health Department; aged 46; died, March 8, of cerebral hemorrhage.

Clair Clayton Patch, Chattanooga, Tenn.; National Medical University, Chicago, 1906; University of Tennessee College of Medicine, Memphis, 1914; formerly on the staff of the Eastern Indiana Hospital for Insane, Richmond, Ind.; aged 47; died, January 23, at the Columbus Hospital, Chicago, of peritonitis.

Philip Louis Hall, Lincoln, Neb.; Rush Medical College, Chicago, 1883; president of the Central National Bank, the Bank of Mead, and the Nebraska Bankers' Association; regent of the University of Nebraska; vice chairman of the Democratic national committee, 1908-1912; aged 73; died, March 14.

J. McLean Moulder, Kansas City, Kan.; Medical College of Ohio, Cincinnati, 1875; member of the Kansas Medical Society; formerly superintendent of the Methodist Hospital, Indianapolis, and superintendent of the Bethany Methodist Hospital, Kansas City, at the time of his death, March 4, aged 67.

George Albert McCulloch, Excelsior Springs, Mo.; University Medical College of Kansas City, Kansas City, Mo., 1901; served in the M. C., U. S. Army, during the World War; aged 58; died, February 27, of injuries sustained when the automobile in which he was driving was struck by a train.

Shailer Emery Lawton ✱ Brattleboro, Vt.; University of Vermont College of Medicine, Burlington, 1881; for thirty years superintendent of the Brattleboro Retreat; member of American Psychiatric Association and the New England Society of Psychiatry; aged 69; died, March 4.

Agnes Eichelberger ✱ Sioux City, Iowa; Northwestern University Woman's Medical School, Chicago, 1888; formerly medical director of the Sioux City Maternity Hospital, and on the staff of the Samaritan Hospital; aged 58; died, February 28, at Los Angeles.

Benjamin Merrill Hopkinson, Baltimore; University of Maryland School of Medicine, Baltimore, 1885; member of the Medical and Chirurgical Faculty of Maryland; supervising dentist of the Baltimore City Health Department; aged 62; died, February 22.

Simeon Newton Leo ✱ New York; Bellevue Hospital Medcila College, New York, 1869; founder and physician in charge of the Home for Aged and Infirm Hebrews; formerly on the staff of the City Hospital; aged 74; died, March 9, of pneumonia.

Charles Nicholas Meriwether ✱ Campbell, Neb.; Hospital College of Medicine, Medical Department Central University of Kentucky, Louisville, 1906; served in the M. C., U. S. Army, during the World War; aged 40; died, February 25.

John Forsythe McWilliam, Somerville, N. J.; Jefferson Medical College of Philadelphia, 1884; member of the Medical Society of New Jersey; veteran of the Spanish-American War; aged 62; died, February 12, of heart disease.

Charles Peters Large ✱ Meyersdale, Pa.; University of Pennsylvania School of Medicine, Philadelphia, 1900; member of the school board; for several years medical director for Somerset County; aged 45; died, February 26.

Ferdinand F. Seeger, New York; New York Homeopathic Medical College, New York, 1869; founder of the Hahnemann Hospital and the Northeastern Homeopathic Dispensary; aged 75; died, February 27, of pneumonia.

Arthur Hanford Baldwin, Norwalk, Conn.; Hahnemann Medical College and Hospital of Chicago, 1881; aged 68; died, February 18, of a skull fracture sustained when his automobile was struck by a trolley car.

Frank T. Shaw, Westminster, Md.; University of Maryland School of Medicine, 1864; formerly member of the state legislature; at one time collector of the port of Baltimore; aged 81; died, February 24, of uremia.

Samuel A. Campbell, Malvern, Iowa; State University of Iowa College of Medicine, Iowa City, 1875; member of the Iowa State Medical Society; aged 72; died, February 22, at Long Beach, Calif., from senility.

Jose Martin Selden, Skyland, N. C.; University of the South Medical Department, Sewanee, Tenn., 1903; formerly chief of staff of the Erlanger Hospital, Chattanooga, Tenn.; aged 46; died, January 7, at Asheville.

Fenton Mercer Nichols, Purcellville, Va.; Medical Department of the University of the City of New York, New York, 1885; member of the Medical Society of Virginia; aged 61; died in February, of pneumonia.

Samuel Herman Meuer ✱ New York; Gross Medical College, Denver, 1895; on the staffs of the Harlem Hospital, New York, and Sea View Hospital, Staten Island; aged 55; died, February 27, of septicemia.

David Orr Edson, New York; Columbia University College of Physicians and Surgeons, New York, 1891; on the staff of the New York Orthopedic Hospital; aged 59; died, February 27, of acute secondary anemia.

Edwin Dearth Orr, Mount Hope, Wis.; Rush Medical College, Chicago, 1883; member of the State Medical Society of Wisconsin; member of the school board; aged 75; died, February 11.

Eugene Myron Herbert, Roanoke, Va.; Atlanta College of Physicians and Surgeons, Atlanta, Ga., 1902; member of the Medical Society of Virginia; aged 54; died recently, of influenza.

John Wesley Ranck, Penns Grove, N. J.; University of Pennsylvania School of Medicine, Philadelphia, 1872; also a druggist; aged 78; died, February 18, of pneumonia.

David Wesley Harris, Carriers Mills, Ill.; College of Physicians and Surgeons, Keokuk, Iowa, 1879; also a druggist; aged 66; died, February 10, of cerebral hemorrhage.

William Huckin, Wasco, Ore.; Rush Medical College, Chicago, 1903; member of the Oregon State Medical Association; aged 56; died, January 3, of chronic nephritis.

Joseph Freeman, Sullivan, Ind.; Medical College of Ohio, Cincinnati, 1879; member of the Indiana State Medical Association; aged 68; died, February 19, of carcinoma.

Ephraim De Groff, Hackensack, N. J.; University of Pennsylvania School of Medicine, Philadelphia, 1863; Civil War veteran; aged 86; died, February 17, of pneumonia.

William E. Stedman, Sullivan, Ill.; Kentucky School of Medicine, Louisville, 1880; formerly member of the state legislature; aged 75; died recently, of influenza.

Stephen D. Doar, McClellanville, S. C.; Medical College of the State of South Carolina, Charleston, 1860; Civil War veteran; aged 85; died, January 29, of senility.

James C. Harrell, Omaha, Ill.; Eclectic Medical College of Pennsylvania, Philadelphia, 1870; also a druggist; aged 75; died in February, of mitral regurgitation.

Thomas P. Coldwell, London, Ky.; University of Louisville Medical Department, Louisville, 1871; Civil War veteran; aged 81; died, February 26, of senility.

Daniel Henry Muir, Newaygo, Mich.; University of Michigan Medical School, Ann Arbor, 1871; aged 79; died in January, at Muskegon, of senility.

Richard Langford Patteson, Buffalo; Queen's University Faculty of Medicine, Kingston, Ont., Canada, 1885; aged 61; died, February 7, of myocarditis.

Francis Othyle Cornwell ✱ Gainesboro, Tenn.; University of Tennessee College of Medicine, Memphis, 1912; aged 33; died, February 27, of paralysis.

Daniel Aloysius Hanrahan, Stamford, Conn.; Bellevue Hospital Medical College, New York, 1893; aged 54; died, February 27, of heart disease.

Charles Glendenning Willson, Chicago; Wisconsin College of Physicians and Surgeons, Milwaukee, 1896; aged 63; died, March 7, of chronic nephritis.

William Adler ✱ New York; Columbia University College of Physicians and Surgeons, New York, 1896; aged 49; died, February 26, of polyneuritis.

Joshua Royston Green ✱ Towson, Md.; University of Maryland School of Medicine, Baltimore, 1899; aged 48; died, February 22, of pneumonia.

John A. Hunter, Pittsburgh; Starling Medical College, Columbus, Ohio, 1891; Civil War veteran; aged 76; died, January 22, of pneumonia.

Harry Hilton Brown, Jasper, Tenn.; University of Tennessee College of Medicine, Memphis, 1921; aged 26; died, February 21, of tuberculosis.

Mary Lavinia Briggs, Dryden, N. Y.; University of Michigan Medical School, Ann Arbor, 1879; aged 74; died, January 12, of pneumonia.

W. E. Hall, Hallsburg, Texas; Chicago Homeopathic Medical College, Chicago, 1883; aged 75; died, February 20, following an operation.

Samuel Hyatt Wellings, Detroit; University of Michigan Medical School, Ann Arbor, 1871; aged 80; died, February 28, of heart disease.

Robert A. Davis, Brooklyn; Louisville Medical College, Louisville, Ky., 1878; also a druggist; aged 70; died, February 23, of asthma.

Douglas P. Adams, Columbus, Ohio; Cincinnati College of Medicine and Surgery, Cincinnati, 1892; aged 82; died, February 21, of senility.

Benjamin F. Wolfe, Jasper, Mo.; College of Physicians and Surgeons, Keokuk, Iowa, 1877; aged 89; died, February 22, of arteriosclerosis.

Henry Wilson Geissinger ✠ Grove City, Ohio; Ohio Medical University, Columbus, 1897; aged 54; died, February 22, of cardiac asthma.

Benjamin Henry Voelbel ✠ Newark, N. J.; Baltimore Medical College, Baltimore, 1901; aged 48; died, February 21, of heart disease.

Harry Edward Diers, Miamisburg, Ohio; Jefferson Medical College of Philadelphia, 1907; aged 38; died, February 24, of heart disease.

Martin Luther Dottin, Chicago; Howard University School of Medicine, Washington, D. C., 1915; aged 31; died, January 12, of diabetes.

Peter Cavanagh, Schuyler, Neb.; University of Michigan Medical School, Ann Arbor, 1883; aged 66; died, January 11, of pneumonia.

Tony L. Bryan ✠ Evansville, Ind.; Medical College of Evansville, 1882; aged 64; died, February 23, of asthma and heart disease.

Elmer Hinman Dwelle ✠ Northwood, Iowa; Northwestern University Medical School, Chicago, 1899; aged 48; died, February 28.

Thomas Parry Tyson, Wadsworth, Nev.; University of Pennsylvania School of Medicine, 1890; was shot and killed, February 17.

Rufus Berley Epting ✠ Greenwood, S. C.; University of Maryland School of Medicine, Baltimore, 1885; aged 65; died, February 18.

Ellis Wolcott Crater ✠ Oceanport, N. J.; Medical Department of Columbia College, New York, 1878; aged 65; died, February 22.

Clarence W. Webb ✠ Wellsboro, Pa.; College of Physicians and Surgeons, Baltimore, 1879; city physician; aged 67; died, February 6.

William M. Casey, Seymour, Ind.; Medical College of Ohio, Cincinnati, 1878; aged 75; died, February 27, of cerebral hemorrhage.

Hugh James Linn, Oakland, Calif.; University of Pennsylvania School of Medicine, Philadelphia, 1878; aged 72; died, February 9.

Gabriel C. Boudousquie, New Orleans; Medical College of Alabama, Tuscaloosa, 1893; aged 52; died recently, of pneumonia.

Jules G. Belknap, Sulphur Springs, Ark. (licensed, Arkansas, 1903); aged 67; died, February 26, of influenza and pneumonia.

John E. Gilmore, Baldwin, Iowa; Medical Department University of Iowa, Keokuk, 1867; aged 83; died, February 24, of senility.

Espy L. Smith ✠ Chicago; Chicago Homeopathic Medical College, Chicago, 1883; aged 70; died, March 5, of heart disease.

Charles Rufus Whitney ✠ Fonda, Iowa; Rush Medical College, Chicago, 1894; aged 57; died, February 21, of heart disease.

Daniel Orville Abrams, Independence, Mo.; Rush Medical College, Chicago, 1884; aged 75; died, February 27, of heart disease.

Uberto H. Merson, Anderson, Ind.; Pulte Medical College, Cincinnati, 1886; aged 59; died, March 3, of cerebral hemorrhage.

Ulysses Grant Richardson, Chicago; Barnes Medical College, St. Louis, 1895; aged 56; died, March 13, of pneumonia.

Maurice Isaac Heider, Philadelphia; Jefferson Medical College of Philadelphia, 1891; aged 57; died, February 14.

George Franklin Ketcham, Brooklyn; Long Island College Hospital, 1876; aged 66; died, February 14, of carcinoma.

Frank Caldwell, Cincinnati; Medical College of Ohio, Cincinnati, 1882; aged 65; died, February 14, of heart disease.

Luke Fox, Tacoma, Wash.; Detroit College of Medicine and Surgery, Detroit, 1895; aged 49; died, February 20.

Robert S. Wilson, Gainesville, Texas; St. Louis Medical College, St. Louis, 1876; aged 67; died, February 20.

William Joseph Johnstone ✠ Boston; Tufts College Medical School, Boston, 1896; aged 60; died, February 13.

Benjamin J. Milam, Macon, Mo.; Jefferson Medical College of Philadelphia, 1877; aged 74; died, February 17.

Arthur A. Milligan, Rogers, Ark.; Physio-Medical Institute, Cincinnati, 1883; aged 63; died, February 9.

The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE JOURNAL'S BUREAU OF INVESTIGATION, OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER GENERAL MATERIAL OF AN INFORMATIVE NATURE

FRANZ C. A. GOERSS

How Oshkosh, Wisconsin, Dealt with an "Advertising Specialist"

Franz Carl Anton Goerss, who has been an "advertising specialist" for years, last December made the mistake of opening an office in Oshkosh, Wis. On January 18, on the complaint of the Social Medical Club of Oshkosh, through its secretary, Dr. Edward J. Campbell, Goerss was arrested for advertising in the *Daily Northwestern,* Oshkosh, to cure venereal disease, which is contrary to the Wisconsin statutes. Goerss first pleaded not guilty but later changed his plea to "guilty" and was fined $100 and costs. The local society followed up the matter and on March 3 Goerss' Wisconsin license was revoked in the Circuit Court. Goerss has left Wisconsin.

Goerss himself is a somewhat insignificant specimen of the genus quack, but his case is of interest because it points a moral. For years this man has been practicing medicine. As will be shown later, the evidence indicates that he was never graduated in medicine and there is reason to believe that the various state licenses that this man holds have been obtained by misrepresentation or fraud.

CLAIMS GRADUATION BY ERLANGEN UNIVERSITY

Goerss claims graduation from the University of Erlangen, Germany. He made this claim when he applied for a license from the Wisconsin Board of Medical Examiners in 1907. At that time he declared under oath that he had been graduated in 1869 by the Frederick Alexander University, Erlangen, Bavaria, Germany. As will be shown later, the state authorities of Illinois, as long ago as 1893, took up officially with the University of Erlangen the question of Goerss' graduation and published the reply from the University of Erlangen to the effect that no man of the name of Franz C. A. Goerss or any one of the name of Goerss was ever graduated either in 1869 or for ten years previously or ten years subsequently (1859 to 1879). In Goerss' application to the Wisconsin board he also swore that he had taken three courses of lectures at the Berlin Polytechnic Seminary.

WHAT ILLINOIS OFFICIALS FOUND

Some years previously Goerss had applied for a state license in Illinois. In this connection we cannot do better than publish verbatim a few paragraphs that appeared Dec. 31, 1894, in the Seventeenth Annual Report of the State Board of Health of Illinois:

> "*Case of Franz C. A. Goerss*: On March 23, 1889, Franz C. A. Goerss filed his application for the State certificate entitling to practice medicine and surgery in Illinois. He presented a diploma purporting to have been issued by the University of Erlangen, Bavaria, dated Jan. 26, 1869, with his affidavit that said diploma was the genuine diploma of that institution and has been issued to him after due examination.
>
> "He presented also letters of recommendation from medical men of East Saginaw and Detroit and paid the fee of $5.
>
> "On March 29, the receipt of his fee and application were acknowledged and he was asked to furnish letters from physicians residing in this State. Replying, he said:
>
> 'I am not acquainted in America, and send you the names of the doctors whom I know. I would ask you to send either the license or my diploma.'
>
> "On the 12th of May he writes to know whether the Board has decided his case, and says:
>
> 'Although I am poor and possess but $150, I would glady send $100 to get my license, if it can be more quickly obtained with money.'
>
> "On April 13th his application was declined and his fee returned. Nov. 8, 1889, he filed another application and

presented a letter of recommendation signed by Dr. G. Schlick and Dr. J. E. Harper of Chicago, and upon these credentials a State certificate was issued him.

"On Jan. 14, 1891, a letter was received from the Western Pennsylvania Medical College, asking for information concerning the professional standing of F. C. A. Goerss, who had presented to that college his diploma from Erlangen, Bavaria, and desired the endorsement of its faculty. Secretary replied, giving the history of the case. On April 15, 1893, a letter was received from Chicago in which it was charged that Goerss had purchased his diploma of Jno. Buchanan of New York. A letter was addressed July 31, 1893, to the dean of the University of Erlangen, asking whether the diploma of that institution had been issued to Goerss. To this he replied:

'I have had the list of the graduates of 1869 very carefully examined, also the lists for ten years before and after (1859-1879) and am convinced that the name Franz C. A. Goerss, or the name Goerss at all, does not occur in them.'

"Notice was sent to the Board's attorney in Chicago to be served on Goerss to appear at this meeting and show cause why his certificate should not be revoked for unprofessional and dishonorable conduct, but the notice was returned with the information that Goerss had left the State and was at present in San Francisco. The notice will be served on him as soon as his address can be ascertained."

DECEMBER 17, 1919.
EDINBURGH SPECIALISTS
DISEASES OF THE STOMACH, LIVER, KIDNEYS, BLOOD, NERVES AND SKIN
DAILY NORTHWESTERN.
Dr. Franz Goerss Specialist
PERMANENTLY LOCATED AT 180 MAIN STREET, OSHKOSH, WIS.
DAILY NORTHWESTERN
A REMARKABLE VISITOR HERE
Graduate of Two European Universities and Surgeon in Two Wars, the Doctor Has Had a Remarkable Career.

Some typical Goerss advertising. The specimen on the left appeared in a Bartlesville, Okla. paper in 1919, when Goerss was the "Edinburgh Specialists." The other two specimens are recent advertising from the *Daily Northwestern* of Oshkosh, Wis. Note the claims in the advertisement on the right that Goerss is a "graduate of the Royal College of Physicians and Surgeons Edinburgh, Scotland." It would have been just as sensible to have said that he was "a graduate of the State Board of Medical Registration and Examination of Kansas." The "Royal College of Physicians, Edinburgh" and the "Royal College of Surgeons, Edinburgh" do not graduate anybody; they are licensing bodies. Notice also that Goerss claims the degree of "M.D." from the University of Heidelberg, Germany, and from Toronto University, of Canada. Goerss was never graduated by Heidelberg and is unknown to the University of Toronto.

In spite of this published record, Goerss seems to have obtained licenses in Kansas, Oklahoma and Arkansas, as well as in Wisconsin. In 1919 Goerss was advertising as the "Edinburgh Specialists" at Bartlesville, Okla. Presumably at that time "Berlin Specialists" or "Erlangen Specialists" would not have made a good advertising slogan.

THE OSHKOSH ADVERTISING CAMPAIGN

Goerss' activities in Wisconsin were first brought to the attention of THE JOURNAL by Dr. Ronald B. Rogers, President of the Twin City Medical Association, Neenah and Menasha, Wis., who sent in one of Goerss' preliminary advertisements and asked for some information on the man. Dr. Rogers was sent such material as the Propaganda department had regarding Goerss and was asked to bring the matter to the attention of the local county officials. Dr. Rogers turned the facts over to the Social Medical Club of Oshkosh, and that local organization through its secretary, Dr. Edward J. Campbell, immediately started an investigation of Goerss and his methods.

Preparatory to opening his office in Oshkosh, Goerss, like most advertising quacks, laid down a preliminary barrage of advertising. He seems to have especially favored the Oshkosh *Northwestern* and this paper was perfectly willing to be so favored. In the *Northwestern* for December 12 there appeared an advertisement, published in news style, with this heading:

"DR. GOERSS WILL SOON BE READY. The European Specialist Hopes to Announce His Opening Within a Few Days. Not a Little Speculation Has Arisen Regarding the Location in Oshkosh of a Distinguished European Medical Savant."

Then followed more than half a column of puffery and falsehood. One of the paragraphs in the article read:

"Dr. Goerss is a medical graduate of the Royal College of Physicians and Surgeons, Edinburgh, Scotland, one of the most famous universities in the world, and one of the most difficult to receive an M.D. degree from. Dr. Goerss also carries the degree of M.D. from Heidelberg, Germany, and from Toronto University, Canada. An array of medical degrees which are probably not possessed by any other physician in the United States."

FAKING THAT WAS NOT EVEN CLEVER

This paragraph illustrates the type of mind that goes with quackery. Goerss first claimed to be a graduate of the "Royal College of Physicians and Surgeons, Edinburgh, Scotland, one of the most famous universities in the world, and one of the most difficult to receive an M.D. degree from." There is no "Royal College of Physicians and Surgeons, Edinburgh." There is a "Royal College of Physicians, Edinburgh" and there is a "Royal College of Surgeons, Edinburgh." Neither one of these is either a university or a college in the American sense; each is a licensing body. Goerss might as well have claimed that he was a "graduate of the State Board of Medical Registration and Examination of Kansas, one of the most famous universities in the world and one of the most difficult to receive an M.D. degree from." Such a statement would have been just as sensible as the one that he published and more nearly accurate because, as a matter of fact, Goerss has been granted a license by Kansas. Goerss also made the statement that he "carries the degree of M.D. from Heidelberg, Germany, and from Toronto University, Canada." Two more falsehoods; Goerss was never graduated by Heidelberg and is utterly unknown to the University of Toronto.

In another of the Oshkosh advertisements Goerss claimed to have the "endorsement" of "Jefferson Medical University, Philadelphia." There is no "Jefferson Medical University." Jefferson Medical College of Philadelphia wrote that Goerss is unknown to them.

All of the facts in the case of Goerss were brought to the attention of Mr. D. K. Allen, District Attorney of Winnebago County by Dr. Edward J. Campbell, Secretary of the Social Medical Club of Oshkosh. The people of Oshkosh and vicinity owe Dr. Campbell and District Attorney Allen a debt of gratitude in driving this quack from their State.

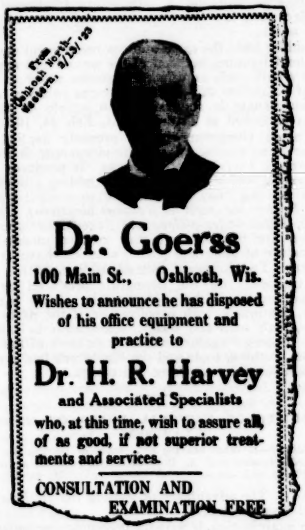
The Oshkosh *Northwestern*, instead of standing for the rights and protection of the public in this matter, has shown itself as morally culpable as Goerss in deceiving the public and violating the Wisconsin statutes. It is a pity that the Wisconsin law does not hold newspapers that publish illegal advertisements equally guilty with the advertisers. We are informed that Goerss while in Oshkosh was merely a hireling and that the individuals behind him were P. J. and William Surand.

THE SUCCESSORS OF GOERSS

Even after Goerss had been prosecuted and driven from the state the *Northwestern* failed to print anything relative to the departure of Goerss and immediately opened its adver-

tising pages to "Dr. H. R. Harvey and Associated Specialists" who held themselves out as "Successors to Dr. Goerss." Dr. Campbell tells us that the individual who registered in Winnebago County for the H. R. Harvey outfit is one George L. Gibbs of Milwaukee. To complete the records in this matter the following facts taken from data in the files of the American Medical Association may be of interest:

H. R. Harvey first located at Rockford, Ill., in 1915, where, apparently, he promptly went into the advertising business. Advertisements of the "weak men" type of "Drs. Francis and Harvey" appeared in the Rockford papers. Francis, with whom Harvey was associated, seems to have been Stanley D. Francis who for a while advertised as "Dr. S. D. Francis and Associated Specialists."


From Oshkosh North-Western, 8/13/'23
Dr. Goerss
100 Main St., Oshkosh, Wis.
Wishes to announce he has disposed of his office equipment and practice to
Dr. H. R. Harvey
and Associated Specialists
who, at this time, wish to assure all, of as good, if not superior treatments and services.
CONSULTATION AND EXAMINATION FREE

After Goerss had been found guilty of violating the Wisconsin statutes and fined and his Wisconsin license revoked, the Oshkosh *Northwestern* carried an advertisement stating that "Dr. H. R. Harvey and Associated Specialists" had taken up Goerss' business at the old stand! We are informed that "Dr. H. R. Harvey and Associated Specialists," as represented in Oshkosh, is really one G. L. Gibbs, M.D., of Milwaukee, who has Wisconsin license No. 941, granted in 1900. Gibbs is said to have a nurse in full regalia in his office, and is continuing the practice of "Dr. Goerss."

S. D. Francis and his brother G. Gordon Francis appear to have operated a string of advertising offices in various parts of the country. Harvey was apparently merely a hired man. G. G. Francis in August, 1921, wrote on the stationery of George L. Gibbs, M.D., of Milwaukee a letter to a physician whom he thought he was going to hire to run one of his, Francis', advertising offices. Francis instructed the man to go to Rockford and report to Harvey who would instruct him into the ways and means of conducting an advertising office. Francis wrote that the man would receive a salary of $40 a week and receive 25 per cent. of all money taken in over $500 a month. He wrote further "I also desire that you not tell Dr. Harvey too much or, in fact, anything about our financial arrangements."

In closing, it is pertinent to ask what will the other states (Kansas, Oklahoma, etc.) that have granted Goerss a license on the basis of claims that have been shown to be fraudulent do in the matter of revoking his license?

Correspondence

THE ALKALINE TIDE IN URINE, AGAIN

To the Editor:—Referring to the article of Drs. Hubbard and Munford in THE JOURNAL, February 3, it is remarkable that a substantial agreement in experience leads to so wide a divergence of opinion. In estimating the personal equation, it must be admitted that I have often been criticized for being too literal and pragmatic. While my letter in THE JOURNAL, Dec. 9, 1922, referred to the possibility of an alkaline tide in a "transcendental sense," the term alkaline to me means a change of color with phenolphthalein requiring an appreciable addition of acid to discharge it. The same personal tendency makes me eliminate certain of Browning's poems over which many persons pore for hours, and litmus as an indicator, whereas Drs. Hubbard and Munford have been more patient and have presented a beautiful table of correspondences in the amphoteric reaction.

Their method of estimating acidity directly in terms of cubic centimeters of tenth-normal alkali required to neutralize the hourly excretion of urine is much more sensible than my "acid units," except that for some purposes the larger numbers are more convenient and, as in the case of large and small calories, it is merely a question of placing a decimal point.

It seems to me that, aside from the question of adopting the doctrine of relativity and designating as alkaline what is merely a reduction of acidity, Drs. Hubbard and Munford have ignored the fact that the expression: "acid and alkaline tide in urine," as long employed in medical literature, usually, if not always, refers to the belief that this tide occurred conversely to digestive secretion, i. e., that the urine became alkaline shortly after a meal while the stomach was secreting acid (the tidal idea antedating the understanding that this acid was hydrochloric) and subsequently acid, while the intestinal and great tributary glands were secreting alkali.

It is this kind of tide that I deny, not only on empiric evidence but also because a true understanding of the process of digestion shows that there cannot be any true tidal action, although, in some degree and with various qualifications, certain tendencies in support of the old theory may be shown to exist, but in a transcendental sense which would only confuse the ordinary investigator. Table 1 of the authors mentioned in the absence of a statement of mealtimes and general make-up of the meals, and the lack of a separation of the urine from 7 p. m. to 7 a. m., does not show any evidence of such a tide except that the very moderate reduction of acidity after what may have been taken as the breakfast hour might be so interpreted. If they will subdivide the urine more accurately, with reference to mealtimes, they will find various inconsistencies. Sometimes, even after meals rich in acid-producing substances, the mere elimination of an excess of water in advance of the development of acid radicals from ingesta or as a result of catabolism of tissues will render the urine low not only in degrees of acidity but also in amount of alkali required to neutralize per hour, immediately after a meal. This, of course, looks like a verification of the alkaline tide theory, if we use the term in a relative sense; but the more plausible explanation is that the elimination of water precedes that of acid radicals which require more time for absorption or even for development.

In persons leading what is called a sedentary life, the evening meal often, perhaps usually, contains about half the total nourishment of the twenty-four hours, and rather more than half of the acid factors. Such persons are rather likely to have at least half of their physical activity after dinner. Thus, the evening urine, say up to 23 or 24 o'clock (not to

mention the occasional lengthening of the day to 25 or 26 o'clock) is very likely to be highly acid in degrees (from 90 to 100 not very rarely) and disproportionately abundant. Often the urine from 18 to 24 o'clock will represent 300 c.c. of tenth-normal solution (the total for the day from Table 1 being 321.10, if my understanding of the data is correct and I have made no mistake in arithmetic, this agreeing substantially with my own averages). At any rate, more than a quarter of acid elimination will occur in the last quarter of the day, and by morning the residue will be very low. It is not materially increased by the usual light breakfast, so that it is to be expected that the low point of acid elimination will occur sometime during the morning before any considerable quantity of acid radicals are introduced by ingestion or developed by catabolism. Probably farmers, soldiers and persons who eat a hearty breakfast and no luncheon would show corresponding differences in the curve, if the term curve is applicable to a fluctuation that is always exceedingly irregular.

A. L. BENEDICT, M.D., Buffalo.

"DIVERTICULUM OF BLADDER IN THE INGUINAL CANAL"

To the Editor:—In reference to diverticulum of the bladder in the inguinal canal, described by Dr. Stein in THE JOURNAL, March 3, it is interesting to note that in the surgical literature of one hundred years ago, frequent mention is made of inguinal cystocele. Samuel Cooper of London, in his Surgical Treatise (First Lines of Practice of Surgery with Notes, by Alexander H. Stevens, M.D., Vol. 2, New York, James V. Seaman, 1822), discusses at considerable length "Cystocele or Hernia of the Bladder." He writes: "The protrusion of the bladder at the abdominal ring is the most frequent. It is generally seen in male subjects, a large proportion of whom are considerably advanced in life, and have been repeatedly afflicted with retention of urine." As the author advises waiting until the fourth day to relieve, by operative procedures, complete retention of urine when catheterization is impossible, stating this to be the accepted dictum of the most eminent surgeons, such practice might account for the frequent occurrence he describes. To quote further: "Contrary to what is usual, however, a few instances are recorded in which the protrusion of the bladder at the abdominal ring has been noticed in young persons and even females. . . . a suspicion has originated that the disease may even sometimes be congenital."

Cooper cites numerous cases. Plater, a physician at Bâle, in attending a case of retention of urine, found the patient's scrotum considerably swelled. Thinking this might be the underlying difficulty in preventing urination, he punctured the tumor, when to his surprise urine burst forth. Guyon, Vander Wiel and others reported similar cases. Verdier is mentioned as recording numerous cases in which urinary calculi had made their way out of the groins by ulceration.

Pott, in operating for supposed inguinal hernia of the intestines, by mistake cut away a protruding portion of the bladder. Recovery being effected, the operation was advised for such bladder condition.

Even bilateral inguinal and femoral hernia of the bladder is described.

T. L. EYERLY, M.D., Denver.

Creative Intelligence Confined to Few.—The great mass of humanity has never had anything to do with the increase of intelligence except to act as its medium of transfusion and perpetuation. Creative intelligence is confined to the very few, but the many can thoughtlessly avail themselves of the more obvious achievements of those who are exceptionally highly endowed.—Robinson: The Mind in the Making.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

THE BITES OF INSECTS

To the Editor:—Inform me where I can obtain information on the treatment of bites and stings of (1) black ants, (2) spiders and (3) kissing bugs, or, as some call them, vinegerones. I believe that black spiders and kissing bugs are quite common in Arizona, but we have a few here. (4) Also tell me the latest treatment for the dermatitis caused by poison oak and poison ivy.

WILLIAM G. CARSON M.D., Cutler, Colo.

ANSWER.—1. According to Castellani and Chalmers' Manual of Tropical Medicine, a satisfactory treatment for the bites of black ants is a local application of 5 per cent. phenol (carbolic acid).

2. For spider bites the same authors recommend application of a proximal ligature, incision of the wound and application of a mild alkali, such as diluted ammonia water or a weak solution of potassium carbonate. A strong solution of potassium permanganate is suggested. An article on the black spider was published in THE JOURNAL, Feb. 14, 1920, p. 479.

3. The name vinegerone is not properly applied to the insects known as kissing bugs. The vinegerone is the whip-tailed scorpion, *Thelyphonus giganteus.* It produces an irritating excretion which has an odor resembling vinegar. The name "kissing bug" has been applied to several species of the order *Reduviidae,* such as *Rasahus biguttatus, Opsicoetes personatus, Melanolestes picipes* and *Conorhinus sanguisugus.* Their bites are painful, and may require medical treatment. Tincture of iodin and phenol ointment have been used with success (THE JOURNAL, July 22, 1899, p. 220).

4. The treatment for the dermatitis produced by poison oak and poison ivy is thorough washing of the parts with alcohol or, cautiously, with gasoline; or, if the parts are not too tender, with soap and water. Care must be taken that the skin is protected against contact with more of the irritant poison from clothing, tools and the like which had previously been contaminated by touching the plants.

CERTIFICATE OF NATIONAL BOARD OF MEDICAL EXAMINERS

To the Editor:—1. What are the advantages of passing the National Medical Board Examination? 2. Does California reciprocate with Massachusetts? Please omit name.

M. C. M., Mass.

ANSWER.—1. The advantages of passing the National Board of Medical Examiners are:

(*a*) The examination is rapidly becoming recognized as a thorough test of a physician's qualifications, and its certificate, therefore, carries with it a corresponding distinction. (*b*) Holders of its certificate are eligible for admission to the final examinations of the Conjoint Examining Board of England and the Triple Qualification Board of Scotland. (*c*) Its certificates are now recognized by the licensing boards of twenty-three states, which makes the holders eligible for license in those states without further examination. These states are:

Alabama	Idaho	Nebraska	Rhode Island
Arizona	Iowa	New Hampshire	South Carolina
Colorado	Kentucky	New Jersey	Texas
Delaware	Maryland	North Carolina	Vermont
Florida	Massachusetts	North Dakota	Virginia
Georgia	Minnesota	Pennsylvania	

The secretary of the board is Dr. John S. Rodman, 1310 Medical Arts Building, Philadelphia.

2. No.

TREATMENT OF DRUG ADDICTS WITH ALCOHOL

To the Editor.—At present it seems that we may experiment with the treatment of drug addiction. It has been proposed to reduce gradually, substituting alcohol for the narcotic. Since it has been reported that drug addicts cannot take alcohol, would it be dangerous to substitute alcohol hypodermically for morphin?

K. S., New York.

ANSWER.—Drug addicts can and do take alcohol. Instances are known in which drug addicts have taken whisky copiously in addition to morphin. Although alcohol is absorbed when given hypodermically, there is a sensation of burning and smarting. It would seem foolish to attempt to treat opium addicts by substituting alcohol for the drug.

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

IDAHO: Boise, April 4. Dir., Mr. Harry L. Fisher, Boise.
MONTANA: Helena, April 3. Sec., Dr. S. A. Cooney, Power Bldg., Helena.

Arizona October Examination

Dr. Ancil Martin, secretary, Arizona State Board of Medical Examiners, reports the written examination held at Phoenix, Oct. 2-3, 1922. The examination covered 10 subjects and included 100 questions. An average of 75 per cent. was required to pass. Of the 3 candidates examined, 2 passed and 1 failed. Seven candidates were licensed by reciprocity. The following colleges were represented:

College	Year Grad.	Per Cent.
PASSED		
Tulane University	(1920)	85
University of Michigan Medical School	(1921)	85.5
FAILED		
Hahnemann Medical College and Hospital of Chicago	(1921)	63.2

College	Year Grad.	Reciprocity with
LICENSED BY RECIPROCITY		
College of Medical Evangelists	(1919)	California
Louisville Medical College	(1892)	Alabama
Tulane University	(1908)	Louisiana
Marion-Sims College of Medicine	(1892)	Missouri
St. Louis University School of Medicine	(1905)	Utah
University of Buffalo	(1894)	New York
University of Tennessee	(1919)	Tennessee

Colorado October Examination

Dr. David A. Strickler, secretary, Colorado State Board of Medical Examiners, reports the written and practical examination held at Denver, Oct. 10, 1922. The examination covered 8 subjects and included 80 questions. An average of 75 per cent. was required to pass. Of the 10 candidates who took the physicians' and surgeons' examination, 2, including 1 osteopath, passed, and 8 candidates failed. Thirty-four candidates were licensed by reciprocity, and one candidate was licensed on government credentials. The following colleges were represented:

College	Year Grad.	Per Cent.
PASSED		
St. Louis College of Physicians and Surgeons	(1920)	75.2
Osteopath		75.5
FAILED		
Illinois Medical College	(1897)	55
Kansas City College of Medicine and Surgery	(1921)	62.7
Kansas City University of Physicians and Surgeons	(1922)	56.3
St. Louis College of Physicians and Surgeons	(1922)	58.1
University of West Tennessee	(1918) 63, (1921) 55.9, (1922)	49.3
Undergraduate		59.3

College	Year Grad.	Reciprocity with
LICENSED BY RECIPROCITY		
University of Arkansas	(1916)	Arkansas
College of Medical Evangelists	(1921)	California
Howard University	(1904)	Mississippi
College of Physicians and Surgeons, Chicago	(1908), (1910)	Illinois
Northwestern University	(1910)	Illinois
Rush Medical College	(1896)	Kansas
Drake University College of Medicine	(1910)	Iowa
Keokuk Medical College, College of Phys. and Surg.	(1906)	Iowa
State Univ. of Iowa Coll. of Med.	(1889) Nebraska, (1916)	Iowa
University of Kansas	(1920)	Kansas
Louisville Medical College	(1894)	Oklahoma
Tulane University	(1896)	Louisiana
Detroit College of Medicine and Surgery	(1921)	Michigan
Beaumont Hospital Medical College	(1892)	Illinois
St. Louis College of Physicians and Surgeons (1909) Missouri	(1903)	N. Dakota
St. Louis University School of Medicine (1912) Missouri	(1903), (1909)	Illinois
University Medical College of Kansas City	(1908)	Wyoming
Washington University	(1920), (1921)	Missouri
Creighton University	(1914)	Nebraska
University of Nebraska	(1902)	Nebraska
Eclectic Medical College	(1912)	Ohio
Starling Medical College	(1890)	W. Virginia
University of Pennsylvania	(1921)	Penna.
Meharry Medical College (1908) Tennessee	(1906) Arkansas, (1907)	Mississippi
Tennessee Medical College	(1900)	Tennessee
University of Virginia	(1917)	Virginia

College	Year Grad.	Endorsement with
ENDORSEMENT OF CREDENTIALS		
Rush Medical College	(1917)	U. S. Navy

Book Notices

ALOHA AROUND THE WORLD. By Karl Vogel. With an Introduction by Commodore Arthur Curtiss James. Cloth. Price, $3.50. Pp. 274, with 95 illustrations. New York: G. P. Putnam's Sons, 1922.

An interesting preface to this book by Commodore Arthur Curtiss James tells how he took the guests around the world in his yacht *Aloha*, thus fulfilling a dream of years, unfulfilled with previous vessels. Among the guests was Dr. Karl Vogel, who kept a daily diary of the progress of the trip, charting the position of the yacht and the distance covered each day. His book is distinctly one for other enthusiastic yachtsmen, for he gives fully all those points that are most likely to interest the sailor rather than the tourist. The trip proceeded leisurely; the days were spent in the usual mild amusements indulged in on such vessels. From the standpoint of the reader, the book would be greatly improved by condensation and the elimination of repetition and nonessential details. It would then lose, however, in representing a good record of the trip for those who took part in the voyage. The book is nicely printed, and is illustrated with numerous photographs taken en route.

DER CHRONISCHE HEREDITÄRE HÄMOLYTISCHE IKTERUS. (Konstitutionelle Hypersplenie). Eine nosographische Studie von E. Meulengracht. Paper. Pp. 226, with illustrations. Leipsic: Dr. Werner Klinkhardt, 1922.

This is a discussion of every known phase of hemolytic icterus. Although the book does not enrich our knowledge of this condition by many new facts, it is of great value because it brings to our attention in a clear and compact form the author's methods of examination and deductions from his experience—he saw fifty cases in the course of four years—and it reviews the literature. The rôle assumed by hereditary influence is so important that to it the author applies the term dominant factor, on the basis of mendelian inheritance. Many cases may show some evidence of an early existence, such as a severe icterus neonatorum. Familial existence is well known. The rare occurrence of a high color index renders it possible that the condition under observation may belong to another group. Vital staining reveals that from 20 to 50 per cent. of the red cells are immature. The author lays great stress on increased fragility. Although this occurs in many other conditions, it is never so marked or so constant as in hemolytic icterus. He decries the value of reports of many observers, because they do not take into consideration the influence of shaking the specimen, the effect of temperature, and normal physiologic variations of the red cells. This symptom is a phenomenon of regeneration. Jaundice is always present, but may be so slight as to escape unnoticed. Dissociated jaundice is always found in the blood serum. The spleen may not be found enlarged on physical examination, but at postmortem examination or at operation it is found enlarged. The author describes in detail the clinical course, the pathologic anatomy, the progress of the disease, the complications, of which gallstones are not infrequent, and cites many examples of the salutary effect of splenectomy, which he considers the best form of treatment. The theory that best explains the cause is hypersplenism. The last chapter is devoted to a citation of case histories.

THE TREATMENT OF FRACTURES WITH NOTES UPON A FEW COMMON DISLOCATIONS. By Charles Locke Scudder, M.D., Consulting Surgeon to the Massachusetts General Hospital. Ninth edition. Cloth. Price, $8.50. Pp. 749, with 1,252 illustrations. Philadelphia: W. B. Saunders Company, 1922.

This work comes to us too well known through many previous editions to require any detailed criticism here. The intelligent and critical analysis of the underlying anatomic, pathologic and mechanical principles shown by the author, combined with his masterly skill in presenting in minute detail the entire subject of fractures, undoubtedly makes this work one of our greatest treatises on the subject. The book is voluminous. It is profusely, almost extravagantly illustrated by line and wash drawings, photographs and roentgenograms. Excellent drawings and roentgenograms are used

to demonstrate the mechanism of displacement, a picture that the operator must be able to visualize if his treatment is to be intelligent. It is worth while mentioning that the text is not padded in description and in illustration with a host of methods and of apparatus that are obsolete. That the material presented is the development of a tremendous personal experience is seen in the chapter on the femur. The author's advocacy of skeletal traction, of Carrel-Dakin treatment in compound fractures, and of conservatism in the matter of open reduction in the majority of fractures, impresses the reader of experience as based on sound principles. Books that actually teach surgical treatment are rare. This is such a book.

LESSONS IN PATHOLOGICAL HISTOLOGY. By Gustave Roussy, Professeur Agrégé, Chef des Travaux Pratiques d'Anatomie Pathologique a la Faculté de Paris, and Ivan Bertrand, Chef de Laboratoire Délégué a la Clinique des Maladies Nerveuses de la Faculté de Paris. Translated from the second French edition by Joseph McFarland, M.D., Sc.D., Professor of Pathology and Bacteriology in the Medical Department of the University of Pennsylvania. Leather. Price, $3.25. Pp. 278, with 124 illustrations. Philadelphia: Lea & Febiger, 1922.

In this book, the right-hand pages present excellent black and white microscopic drawings, while the left-hand pages explain what is seen. The student is told, first, what the organ presents in the way of characteristic features on the naked eye inspection of the section, and then what may be seen with the microscope. The book is a capital guide to the microscopic study of morbid changes in tissues, and may be recommended without hesitation for that purpose.

Medicolegal

Insufficient Evidence of Malpractice or Maltreatment

(Kirby's Administrator v. Berea College et al. (Ky.), 244 S. W. R. 775)

The Court of Appeals of Kentucky, in affirming a judgment in favor of the defendants, says that the plaintiff sought to recover damages for the death of his daughter on account of alleged negligent, unskilful and wrongful treatment of her while she was an inmate of the hospital operated in connection with the college, she being afflicted with measles, which developed into pneumonia, followed by her death. Besides the college, the defendants were the chief surgeon in charge of the hospital, and his assistant; the superintendent of the hospital, and the superintendent of the nurses in it.

The patient contracted the measles; was put into the hospital, January 23, and died from pneumonia, February 4. The plaintiff introduced three physicians, not connected with the college or its hospital, who visited the patient, either, January 30 or 31; and they diagnosed the case as one of patchy pneumonia, a condition which they thought had been developing for, perhaps, forty-eight hours, although they were not absolutely sure of that fact. They were furnished, and examined, the chart made by the nurse or nurses in charge of the patient, on which was recorded not only her temperature, respiration, etc., but also the treatment given her; and they testified in substance that they saw nothing indicating improper treatment. Of course, they could not tell when the physician in charge of the patient discovered or detected the development of pneumonia. That physician, a woman, did not testify; nor was any statement of hers proved. No admissions of any dereliction of duty were proved against either of the defendant physicians further than that the chief surgeon stated that he had not discovered the pneumonia before the examination of the patient by the physician witnesses because the woman physician had charge of her, and he was busily engaged with the numerous other patients then confined in the hospital, there being an epidemic of influenza and measles prevailing at the time. It was furthermore testified that on some occasions, but how long prior to the development of the pneumonia was not shown, the patient was permitted to walk from her bed to the toilet, a distance of 25 feet; but it was proved that the hospital was warm and comfortable at the time, as well as kept in the best condition. Some of the physician witnesses testified that it might not be the best and most approved method to allow such action on the part of the patient, but they did not pretend to say that the pneumonia could be attributed with any degree of certainty to it; nor does the court understand that their testimony condemned it in an ordinary case of measles. There was an attempt to make much of the testimony of a witness that a nurse struck the patient on the shoulder while in the toilet, and at one time declined to hand her a drink of water. But the same witness testified that the patient was noisy and somewhat unruly, and that the striking was only a gentle stroke on the shoulder, with a request that she must not make so much noise; also, that the incident did not cause the patient to be excited, nor did it in any wise unnerve her so far as the witness could observe. Of course, if it had been shown that the nurse was guilty of acts of such cruel and brutal nature as to be reasonably calculated to produce nervousness, excitement or other conditions to which the development of pneumonia could be reasonably attributed, a different question would be presented. But the court is convinced, from all the evidence in the case, that the plaintiff failed to sustain his alleged cause of action.

Physicians and those having in charge the treatment of patients are not required by law to insure their recovery; their measure of duty is to possess such knowledge and skill as is possessed by others similarly engaged in the community, and to exercise ordinary care in the application of their knowledge and skill. That duty does not require the performance of every act which the most cautious and skilful would employ; and before liability will attach it must appear that the damages sued for were the proximate result of some alleged act of omission or commission on the part of the defendant in malpractice cases. Mere speculation or remote probability is not sufficient to fix liability.

Society Proceedings

COMING MEETINGS

Alabama, Medical Association of the State of, Mobile, April 17-20. Dr. H. G. Perry, State Board of Health, Montgomery, Secretary.
American Association of Anatomists, Chicago, March 28-30. Dr. Lewis H. Weed, Johns Hopkins Medical School, Baltimore, Secretary.
American Association of Pathologists and Bacteriologists, Boston, March 29-30. Dr. H. T. Karsner, Lakeside Hospital, Cleveland, Secretary.
American Association of Physicians, Atlantic City, May 1-3. Dr. Thomas McCrae, 1929 Spruce Street, Philadelphia, Secretary.
American Congress on Internal Medicine, Philadelphia, April 2-7. Dr. Frank Smithies, 1002 North Dearborn Street, Chicago, Secretary.
American Gastro Enterological Association, Atlantic City, April 30-May 1. Dr. Arthur F. Chace, 525 Park Ave., New York, Secretary.
American Laryngological Association, Atlantic City, May 16-18. Dr. George M. Coates, 1811 Spruce Street, Philadelphia, Secretary.
American Laryngological, Rhinological and Otological Society, Atlantic City, May 10-12. Dr. W. H. Haskin, 40 E. 41st St., New York, Sec'y.
American Society for Clinical Investigation, Atlantic City, April 30. Dr. James H. Means, 15 Chestnut Street, Boston, Secretary.
Georgia, Medical Associaton of, Savannah, May 2-4. Dr. Allen H. Bunce, Healey Building, Atlanta, Secretary.
Illinois State Medical Society, Decatur, May 15-17. Dr. W. D. Chapman, Silvis, Secretary.
Iowa State Medical Society, Ottumwa, May 9-11. Dr. T. B. Throckmorton, Bankers Trust Building, Des Moines, Secretary.
Kansas Medical Society, Kansas City, May 2-4. Dr. J. F. Hassig, 800 Minnesota Avenue, Kansas City, Secretary.
Louisiana State Medical Society, New Orleans, April 24-26. Dr. P. T. Talbot, 1551 Canal Street, New Orleans, Secretary.
Maryland, Medical and Chirurgical Faculty of, Baltimore, April 24-26. Dr. J. A. Chatard, 1211 Cathedral Street, Baltimore.
Mississippi State Medical Association, Vicksburg, May 8-9. Dr. T. M. Dye, Clarksdale, Secretary.
Missouri State Medical Association, Joplin, May 9-11. Dr. E. J. Goodwin, 3529 Pine Street, St. Louis, Secretary.
Nebraska State Medical Association, Lincoln, May 14-17. Dr. R. B. Adams, 1013 Terminal Building, Lincoln, Secretary.
North Carolina, Medical Society of the State of, Asheville, April 17-19. Dr. L. B. McBrayer, Sanatorium, Secretary.
Ohio State Medical Association, Dayton, May 1-3. Mr. D. K. Martin, 131 East State Street, Columbus, Secretary.
South Carolina Medical Association, Charleston, April 17-19. Dr. Edgar A. Hines, Seneca, Secretary.
Tennessee State Medical Association, Nashville, April 10-12. Dr. Larkin Smith, 154 Eighth Avenue, N., Nashville.
Texas, State Medical Association of, Fort Worth, May 8-10. Dr. Holman Taylor, 207½ W. 11th Street, Fort Worth, Secretary.
Western Electro-Therapeutic Association, Kansas City, Mo., April 19-20. Dr. Charles Wood Fassett, 115 E. 31st Street, Kansas City, Secretary.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Journal of Diseases of Children, Chicago

January, 1923, **25**, No. 1

*Physiology of Exercise in Childhood. I. Study of Normal Children of School Age. M. Seham and G. Egerer-Seham, Minneapolis.—p. 1.
*Celiac Disease. R. Taylor, Minneapolis.—p. 46.
*Treatment of Flat Warts by Internal Administration of Mercury. H. Fox, New York.—p. 55.
Comparison of Diphtheria Immunity in Mother and in the New-Born. H. O. Ruh and J. E. McClelland, Cleveland.—p. 59.
Chemical Studies of Blood of Mother and Fetus. M. G. Howe and M. H. Givens, Pittsburgh.—p. 63.
*Colloidal Gold Reaction in Acute Poliomyelitis. J. C. Regan, A. Litvak and C. Regan, New York.—p. 76.

Physiology of Exercise in Childhood.—Briefly, the Sehams found that all forms of exercise produce an increase in the pulse rate and the blood pressure, the increase depending mainly on the type of exercise.

Celiac Disease.—Taylor's report is based on a study of seven cases, the cardinal features of which agree with those described as being characteristic of celiac disease. Abstracts of their records and of the data gleaned from each are given. In all the seven patients the disease was preceded by a long period of bad feeding, or by a parenteral infection, or by both. Gastric achlorhydria was present in the five cases in which the stomach contents were examined. The liver was found smaller than normal in every case. As further evidence of the presence of liver pathology there was in one case a complicating Banti's disease; in another case leucin and tyrosin were present in the urine, and in a third case the duodenal juice contained a pathologic pigment. It appears that there are four points to be considered in successful dietary treatment: (1) In recognition of the achlorhydria, to use soured milk and fruit acids; (2) to supply readily absorbable carbohydrate primarily for its good effect on the liver; (3) to wait patiently for months on a high protein intake before adding starches and fats, and (4) to prevent fecal accumulations which can undergo bacterial decomposition.

Treatment of Flat Warts by Internal Administration of Mercury.—Fox's experience in trying the method suggested by White is confined to eleven cases, one of which is not suitable for analysis as the patient was treated by another physician with the roentgen ray after she had taken mercury for one week. The result in this case was successful at the end of a few weeks. Of the ten cases in which the mercury treatment was given a fair trial, the result was entirely successful in five. In these cases the disappearance of the eruption was absolutely complete in from three to eight weeks. There had, furthermore, been no return of the disease in these patients at the end of one, three, four and seven months and three years, respectively. The treatment consisted solely of the internal administration of mercurous iodid tablets in doses of ¼ grain, three times a day. Smaller doses were given the younger patients. No local remedies whatever were employed. In the five unsuccessful cases there was no improvement after two or four weeks of treatment.

Colloidal Gold Reaction in Acute Poliomyelitis.—In a series of forty-two cases of acute poliomyelitis, including 132 spinal fluids, a study of the colloidal gold reaction was carried out by Regan and his associates. There was always a reaction with colloidal gold solution in the case of every poliomyelitic fluid taken during the acute stage of the disease. This reduction was constantly in the same zone—the zone of low dilutions, the so-called syphilitic zone. In 88 per cent. of the spinal fluids examined, the reaction occurred in the first six dilutions between 1:10 and 1:320. In fourteen spinal fluids the reaction extended to the seventh dilution (1:640). These patients more or less characteristically presented marked polyneuritic or meningitic symptoms, or else pronounced paralysis. In no instance was a normal reaction encountered before the end of the third week of illness. In twenty-three patients the spinal fluid was examined as late as the eighth week, and fifteen, or 65 per cent., had become normal by that time.

American Journal of Psychiatry, Baltimore

January, 1923, **2**, No. 3

Psychoneuroses. Problems and Lines of Investigation. C. M. Campbell, Cambridge, Mass.—p. 367.
*Blood Chemistry in Mental Diseases. K. M. Bowman, White Plains, N. Y.—p. 379.
Blood Fragility Studies in Certain Psychopathic States. T. Raphael, Ann Arbor, Mich., and F. C. Potter, Mercer, Pa.—p. 409.
*Aporrhegma Reactions in Psychoses. J. C. Whitehorn, Waverley, Mass.—p. 421.
*Hematologic Pictures in Endocrine Syndromes Found Associated with Epilepsy. H. A. Patterson, Buffalo.—p. 427.
Long Section Method, Contra Cross Section Method in Study of Mental Disease. H. Lundholm, J. S. Plant and J. C. Whitehorn, Waverley, Mass.—p. 439.
Follow-Up Work in Mental and Surgical Cases. E. D. Bond, West Philadelphia, Pa.—p. 445.
Psychology in Medicine. F. L. Wells, Boston.—p. 451.
Observations of Juvenile Court Psychiatrist. O. G. Wiedman, Hartford, Conn.—p. 459.
Constitutional Psychopathic Inferior. Problem in Diagnosis. A. E. Johnson, Philadelphia.—p. 467.
*Catatonic Dementia Praecox; Physiotherapeutics, and Results Obtained in Series of Twenty Cases. D. C. Main, Washington, D. C.—p. 473.

Blood Chemistry in Mental Diseases.—Two hundred and twenty-nine cases of mental disease were examined by Bowman as to the blood constituents. The average findings for blood nonprotein nitrogen, dextrose, uric acid and chlorids were found to be normal for all types of mental disease, except psychoses with cardiorenal disease and general paralysis, both of which conditions showed increased findings for nonprotein nitrogen and dextrose.

Aporrhegma Reactions in Psychoses.—The results presented by Whitehorn merely indicate that there is a tendency among some types of psychotic persons to give less than the usual normal reaction to histamin. The reaction appears to be sufficiently marked to encourage the hope that analytic procedures for the detection and estimation of certain aporrhegmas may yield information of value in the understanding of mental disorders.

Hematologic Pictures in Endocrine Syndromes Associated with Epilepsy.—One hundred and twenty-eight cases presenting some endocrine manifestation in an epileptic have been examined by Patterson. Of these, the overwhelming majority falls into the pituitary group. The leukocytic formula in all these disorders is either distorted or masked by the epileptic hyperleukocytosis.

Catatonic Dementia Praecox.—Main endorses the value of occupational therapy in this condition. He describes what is being done in this field at St. Elizabeth's Hospital, Washington, D. C.

Archives of Dermatology and Syphilology, Chicago

February, 1923, **7**, No. 2

*Hydroa Vacciniforme Seu Aestivale. F. E. Senear and H. W. Fink, Chicago.—p. 145.
Pityriasis Rosea. W. J. Highman and R. H. Rulison, New York.—p. 163.
*Myeloid Leukemia of Skin. L. W. Ketron and L. N. Gay, Baltimore.—p. 176.
*Pityriasis Rubra Pilaris—Familial Type. E. P. Zeisler, Chicago.—p. 195.
Experimental Production of Paraffin Oil Tumors in Monkeys. F. D. Weidman and M. S. Jefferies, Philadelphia.—p. 209.
Tumor Formation After Injection of Mercuric Salicylate in Vegetable Oil: Case Report. I. C. Sutton, Anaheim, Calif.—p. 223.
Sporotrichosis. E. D. Crutchfield, Galveston, Texas.—p. 226.

Hydroa Vacciniforme Seu Aestivale.—To the seventy-eight cases recorded in the literature of what they feel can be considered as being cases of hydroa vacciniforme, Senear and Fink add two cases. The sun's rays alone were listed as the exciting factor in 80 per cent. of the cases. Hematoporphyrinuria was present in 17.5 per cent. Heredity apparently plays some part, as more than one member of the family was affected in five instances. Treatment has been of little avail, although ointments containing quinin or esculin have been reported as of value in some cases.

Myeloid Leukemia of Skin.—Ketron and Gay report the case of a woman, aged 63, who noticed an eruption of bluish-red nodules along the costal margins early in December, 1916. A few days later she began to have severe pain in

the lower portion of her back and upper abdomen. The nodules rapidly increased in size and distribution, appearing on the head and neck. They were associated with intense itching. Physical examination at this time revealed abdominal tenderness and enlargement of the liver and spleen. The blood examination showed only a secondary anemia. Within a period of two months the nodules had spread over the entire body. They had a mahogany color, and some of them measured as much as 3 cm. in diameter. The spleen and liver, however, had decreased somewhat in size, and there was no abdominal tenderness. The nodules then gradually disappeared, leaving only discolored macular areas. In February, 1917, there appeared over the left leg a hemorrhagic eruption. This was of two weeks' duration. Repeated study of the blood showed nothing of special importance. In the beginning of March, 1917, the skin nodules again suddenly made their appearance over the body and in the throat, associated with general weakness, a rise in temperature and enlargement of the spleen and liver. The blood count then for the first time showed the picture of myeloid leukemia. The patient died April 11, about four months after the first eruption of skin nodules, and one month after the blood examination had shown the presence of a myeloid leukemia. Necropsy confirmed the clinical diagnosis.

Pityriasis Rubra Pilaris; Familial Type.—Zeisler reports four cases which occurred in one family, a father and three children. This is said to be the first instance of the familial occurrence of the disease noted in this country, although there are two reports of a similar nature from Europe. Evidence is presented that heredity plays a rôle in the etiology of this rare condition.

Archives of Neurology and Psychiatry, Chicago

February, 1923, **9**, No. 2

Genesis of Cerebellar Functions. F. Tilney, New York.—p. 137.
*Acute and Chronic Chorea. G. Wilson and N. W. Winkelman, Philadelphia.—p. 170.
*Two Cases of Brain Tumor with Ventriculography. P. Bassoe and C. B. Davis, Chicago.—p. 178.
Difference Between Muscular and Neuromuscular Interpretation of Walking. W. M. Kraus, New York.—p. 184.
Nature of Certain Functional Nervous Disturbances and Their Treatment Along Metabolic Lines. R. Pemberton, Philadelphia.—p. 208.

Pathologic Anatomy of Chorea.—A clinicopathologic study was made by Wilson and Winkelman of a case of Sydenham's and another of Huntington's chorea. In the typical case of Sydenham's chorea, mitral endocarditis was found. The pathology in the brain—acute cell changes with the marked congestion—is attributed to the acute infectious disease from which the patient died. In the case of chronic chorea the process involved mainly the striatum (caudate and putamen) and the cortex; the changes being typical of a chronic degenerative process, selective in action. No relationship could be found between the acute and chronic varieties of chorea. The findings of epidemic encephalitis were not present in the case of Sydenham's chorea. When such are present, as in Marie's case, the authors believe them to be the result of the epidemic forms of encephalitis and not ordinary types of acute chorea.

Ventriculography in Brain Tumor.—The two cases in which Bassoe and Davis made use of this method point out that in the hands of novices ventriculography is likely to be misleading and dangerous. In the first case, sufficient air had not been introduced into the posterior horn to fill the anterior horns completely. In the second case, in which the ventricles were unexpectedly small, evidently too much air was introduced and death was caused by the acute compression. Aside from determining the absence of hydrocephalus, the authors did not learn to locate the tumor any more accurately than they had by the neurologic symptoms. However, they admit that in selected cases and in skilful hands the method occasionally will lead to localization and successful removal of a tumor which cannot be located by other known methods.

Delaware State Medical Journal, Wilmington

October-November-December, 1922, **13**, No. 4

Unusual Eye Conditions. E. R. Mayerberg, Wilmington.—p. 5.
Infant Feeding. R. R. Spahr, Middletown.—p. 11.
Essential Differences Between Three Schools of Medicine—Allopathic, Eclectic, Homeopathic. J. M. Scudder.—p. 18.

Illinois Medical Journal, Oak Park

February, 1923, **43**, No. 2

Ectopic Gestation: Report of Cases. T. W. Nuzum, Janesville, Wis.—p. 107.
Cancer. W. M. Harsha, Chicago.—p. 109.
Choriocarcinoma Following Extra-uterine Pregnancy. J. B. Moore, Benton.—p. 114.
Edematous Cardiopath. J. M. Patton, Chicago.—p. 117.
Surgery of Upper Abdomen Under Local Anesthesia. R. E. Farr, Minneapolis.—p. 120.
*Treatment of Chronic Fatigue Intoxication. E. H. Ochsner, Chicago.—p. 125.
Pernicious Anemia. R. D. Robinson, Chicago.—p. 129.
Anatomy, Physiology, and Diseases of Circulatory System, and Management and Treatment of Such Diseases. H. C. Houser, Westfield.—p. 133.
Diabetes Mellitus. R. F. Herndon, Springfield.—p. 137.
Industrial Eye Injuries. F. Allport, Chicago.—p. 145.
Thoughts on Medical Organization. A. F. Kaeser, Highland.—p. 149.
Etiology and Management of Neurasthenic Conditions. F. R. Fry, St. Louis.—p. 151.
Thoughts on Preventive Surgery with Special Reference to Focal Infection. G. H. Parmenter, Beecher City.—p. 156.
Treatment of Insane. C. H. Anderson, Anna.—p. 159.

Treatment of Chronic Fatigue Intoxication.—Ochsner reiterates his belief that chronic fatigue intoxication is a distinct disease entity with definite symptoms. In the treatment of patients suffering from this affection, four objects must constantly be kept in mind: (1) maintain or improve the nutrition of the patient as the individual case may demand; (2) prevent the further accumulation of fatigue material; (3) ameliorate the symptoms as much as possible, and (4) remove the already accumulated fatigue material. In nearly all of the severe cases the patients suffer much from hyperchlorhydria, eructation and belching of gas, and constipation. Proper diet, rest, and looking after the symptoms as they arise, sometimes make these patients more comfortable, but these alone will never cure them. The active treatment should have for its object the elimination of all accumulated fatigue material in the shortest possible time with the least risk and discomfort to the patient. Good air, both day and night, is absolutely essential in order that the products of fatigue may be properly oxidized and converted into a form which may be easily eliminated. Suitable baths are also valuable adjuncts. In the extreme cases the use of castor oil is very important. Some of these patients can be saved only if they are given one ounce of castor oil every evening on retiring or the first thing in the morning, in order that the end results of the faulty digestion may be cleared out of the gastro-intestinal tract daily and the fatigue material which may have found its way into the gastro-intestinal tract after massage may also be removed. The measures already mentioned must be supplemented by carefully supervised, intelligent massage. When the patient is completely relieved of all of the symptoms and of all of his fatigue spots, the time for physical exercise and physical reeducation of the atrophied muscles has arrived. The exercises must be increased gradually, always stopping short of exhaustion. Later more strenuous exercise such as golf, tennis, walking, rowing are indicated and moderate fatigue encouraged, but exhaustion guarded against in order that a relapse may be averted.

Indiana State Medical Association Journal, Ft. Wayne

January, 1923, **16**, No. 1

*Sensitivity to Epidermal and Pollen Proteins: Diagnosis and Treatment. J. A. Wynn, Indianapolis.—p. 1.
Safe Extraperitoneal Method for Drainage of Intra-abdominal Abscesses. J. R. Eastman, Indianapolis.—p. 6.
Treatment of Pulmonary Tuberculosis. A. Henry, Indianapolis.—p. 9.
Arrhythmia. I. E. Brenner, Winchester.—p. 14.
Ideals of Medical Profession. C. H. Good, Huntington.—p. 15.

Sensitivity to Epidermal and Pollen Proteins.—It is pointed out by Wynn that hay-fever, certain forms of asthma, and various skin conditions are but different manifestations of the state of sensitivity to some protein or proteins. A general method is outlined for differentiating these types on the basis of clinical history and the evidence of a specific skin reaction. Special attention is directed in pollen and epidermal protein cases, to the fact that they give a seasonal history in one case and a history of proximity to a given animal or fowl in the other; that both types are best treated prophylactically by removal of cause, but that desensitization

is possible and practical in case of the pollens. A method is outlined and the precautions are emphasized. Though at present desensitization must be left to those especially prepared for the work, with reasonable attention to the subject, the general practitioner should not only recognize cases of sensitivity, but classify them with considerable accuracy and accordingly give intelligent advice regarding management. The condition is common enough and important enough to warrant the attention of all engaged in the general practice of medicine.

Journal of Cancer Research, Baltimore

July, 1922, **7**, No. 3

*Transplantable Metastasizing Chondrorhabdomyosarcoma of Rat. F. D. Bullock and M. R. Curtis, New York.—p. 195.
*Primary Carcinoma of Liver. F. Helvestine, Jr., Charlottesville, Va.—p. 209.

Transplantable Metastasizing Chondrorhabdomyosarcoma of Rat.—The chondrorhabdomyosarcoma of the sternum of the rat described by Bullock and Curtis was a transplantable metastasizing tumor in which cross striated muscle fibers persisted through fifteen generations, although the cartilaginous elements early lost their power of differentiation.

Primary Carcinoma of Liver.—A primary carcinoma of the liver in a woman, aged 63, is described by Helvestine. The patient began to lose strength and weight about two months prior to admission. About three weeks before admission her abdomen became distended and a little later she became jaundiced. On physical examination the margin of the liver could be palpated below the costal margin. A diagnosis of carcinoma of the liver was made. Three days after admission the patient died. On the basis of the arrangement of the cells, the presence of capillary stroma, and the absence of proliferation of the bile duct epithelium, this carcinoma is classed as a hepatoma. Cirrhosis was not present in the liver tissue, and nowhere was there hyperplasia of the liver cells. Although there were numerous instances in which the cancer cells grow between parallel capillaries, and were in direct continuity with the liver cell trabeculae, there were no transitions between liver cells and cancer cells. The growth was unicentric in origin, the primary focus being in the right lobe, from whence it grew by direct extension, without using the portal system as a pathway. A case of primary carcinoma of the gallbladder, with invasion and metastases in the liver is also described. Appearances very similar to those observed in the case of primary carcinoma were seen.

Journal of Immunology, Baltimore

January, 1923, **8**, No. 1

Local and General Immunity. F. P. Gay, San Francisco.—p. 1.
Hereditary Blood Qualities: Statistical Considerations. R. Ottenberg, New York.—p. 11.
Relation of Antigen to Antibody (Precipitin) in Vitro. E. L. Opie, St. Louis.—p. 19.
*Protective Action of Normal Serum in Experimental Infection with Bacillus Diphtheriae. T. J. Mackie, Cape Town, South Africa.—p. 35.
Hepatic Reaction in Anaphylaxis. I. Vasomotor Reactions in Isolated Canine Liver. W. H. Manwaring and S. Brill, Palo Alta, Calif.—p. 47.
Relation of Antigen to Antibody (Precipitin) in Circulating Blood. E. L. Opie, St. Louis.—p. 55.

Protective Action of Normal Serum Against Diphtheria.—In guinea-pigs experimentally infected with *Bacillus diphtheriae*, normal serum (horse, ox, sheep, cat, rabbit, human), injected subcutaneously at the same time as the inoculation, Mackie says, exerts a definite protective action. Two cubic centimeters of normal horse serum may protect in this way against 12 M. L. D. (minimal lethal doses) of a *B. diphtheriae* culture. No protection occurs if the serum injection is delayed for two hours after the inoculation. The activity of the serum persists at 57 C., but is lost at 70 C. and higher temperatures. The serum of one guinea-pig injected subcutaneously into another may protect the latter when experimentally infected with *B. diphtheriae* or, at least, exerts a definite delaying effect on the course of the infection. Normal horse serum is also similarly protective in guinea-pigs injected with diphtheria toxin; 10 c.c. of serum may protect against 10 M. L. D. The serum of one guinea-pig is not protective to another injected with diphtheria toxin. In the case of animals surviving after protection by normal serum a marked local lesion develops at the site of inoculation.

Journal of Infectious Diseases, Chicago

January, 1923, **32**, No. 1

*Cultivation and Isolation of Gonococci. R. A. Kinsella, G. O. Broun and O. Garcia, St. Louis.—p. 1.
*Improved Methods for Isolation and Later Cultivation of Bacillus Pertussis. O. R. Povitzky, New York.—p. 8.
Existence of More Than One Immunologic Type of Bacillus Pertussis. C. Krumwiede, L. Mishulow and C. Oldenbusch, New York.—p. 22.
*Experimental Measles in Rabbits and Monkeys. M. Nevin and F. R. Bittman, New York.—p. 33.
Serologic Relationships in Streptococcus Viridans Group. Influenza Studies XI. J. F. Norton, Chicago.—p. 37.
*Production of Spasms of Diaphragm in Animals with Streptococcus from Epidemic Hiccup. E. C. Rosenow, Rochester, Minn.—p. 41.
*Production of Spasms of Diaphragm in Animals by Living Cultures, Filtrates, and Dead Streptococcus from Epidemic Hiccup. E. C. Rosenow, Rochester, Minn.—p. 72.
Atypical Typhoid Fever with Slowly Agglutinable Typhoid Bacillus in a Periosteal Lesion. M. A. Blankenhorn, E. E. Ecker and M. K. King, Cleveland.—p. 95.
Influence of Carbon Dioxid on Growth of Bacteria. G. E. Rockwell, Cincinnati.—p. 98.

Cultivation of Gonococcus.—For isolation of the gonococcus, Kinsell, Broun and Garcia found the use of a 1.6 per cent. agar of p_H 7.6 to which 30 per cent. beef serum was added while the agar was still hot (from 90 to 100 C.), quite satisfactory. It is important that the plates be not too moist when used. A study of various culture mediums has shown that Thallmann's agar and Vedder's starch are excellent for the cultivation of gonococcus. On semisolid 0.5 per cent. agar, 5 per cent. gelatin and 1 per cent. nutrose, the gonococcus has grown and survived for from three to four weeks. It appears that physical factors are possibly of equal importance with nutritional factors in the cultivation of the gonococcus.

Cultivation of Bacillus Pertussis.—It was found by Povitzky that a definitely acid reaction in a suitable medium is favorable for the isolation and growth of *Bacillus pertussis*. Such a reaction is especially valuable because it inhibits the growth of *Bacillus influenzae* and other organisms found in the sputum of patients with pertussis. The most favorable point of acidity for isolation was p_H 5. The limits of acidity favorable to the growth of *B. pertussis* are p_H from 6.1 to 4.4. *Bacillus pertussis* immediately after isolation grows most luxuriantly on potato-glycerol-veal agar medium unadjusted (p_H from 5.8 to 6.1) with blood in the proportion of 1:3 or 1:4 added at a temperature of 45 C.; but this medium is too favorable for the growth of various other organisms present in the sputum and is therefore not suitable for the isolation of *B. pertussis*. On the other hand, the Bordet-Gengou medium, which contains neither meat nor peptone, is less favorable for the growth of the associated organisms of the mouth and nasopharynx. It was found, therefore, that this medium after adjustment to a suitable acid reaction (p_H 5) was the best for the isolation of *B. pertussis*.

Experimental Measles.—In the first series of animals used by Nevin and Bittman the virus obtained from patients with measles on the second day of the disease was passed through four rabbits and then produced symptoms typical of measles in a monkey. In the second series of animals the virus obtained as stated was passed through three rabbits and then through three monkeys in which symptoms typical of measles were produced. The monkey to monkey passage eliminated any question of a rash due to foreign protein. A control monkey injected with normal human blood showed no reaction. The results of these two series of passages confirm previous findings that the virus of measles survives rabbit passage and produces symptoms typical of measles in the monkey *(Macacus rhesus)*.

Streptococcus in Epidemic Hiccup.—Eight cases of epidemic hiccup were studied by Rosenow. From the infection atrium of each a streptococcus, alike in morphology and cultural character, was isolated, and with each strain, spasms of the diaphragm, and other muscles were reproduced in animals. The organism was isolated from these animals and characteristic symptoms were induced on reinoculation. The streptococcus was demonstrated in the lesions and proved absent elsewhere on microscopic examination of sec-

tions. These results were not obtainable with streptococci from similar sources in other diseases. The possibility of an accompanying filtrable virus was excluded by the filtration experiments and by the successful reproduction of the disease after many rapidly made subcultures of the different strains. The methods with which positive results were obtained included procedures in which the conditions in the patient were closely simulated. The type of the disease and lesions induced were similar to those noted in the spontaneous disease in man. The conclusion that epidemic hiccup is due to a streptococcus having peculiar neurotropic properties seems warranted. The question of the origin and absolute specificity of this streptococcus remains to be determined.

Streptococcus Filtrates Cause Hiccup.—The streptococcus of epidemic hiccup has been found by Rosenow to produce a substance or complex of substances which on inoculation into animals produces spasms of the diaphragm sometimes associated with tremor and twitchings of the masseters and other muscles. It is demonstrable in filtrates, in the clear centrifugalized broth, and in the washed dead bacteria of young cultures at the time the living streptococcus produces like symptoms in animals, and disappears from these as the living bacterium loses this power from artificial cultivation. The symptoms and lesions produced were essentially alike, except as to duration and extent, following injections of active filtrates, suspensions of dead bacteria, and the living organism. Hence, the specific localizing power with the production to this highly characteristic syndrome would seem to be due to a chemical substance produced either by the streptococcus or during the reaction incited in the host.

Journal of Urology, Baltimore

January, 1923, **9**, No. 1

*Experimental Study of Various Chemicals Used in Pyelography. O. S. Lowsley and H. R. Muller, New York.—p. 1.
*Perirenal Insufflation of Oxygen. Wm. C. Quinby, Boston.—p. 13.
Pyelonephritis. W. C. Stirling, Jr., Winston-Salem, North Carolina.—p. 29.
*Germicidal Character of Emanations from Colloids of Certain Silver Salts. E. G. Ballenger and O. F. Elder, Atlanta, Ga.—p. 37.
Renal Torsion. W. F. Braasch, Rochester, Minn.—p. 53.
Case of Reduplication of Left Ureter and Left Renal Pelvis. R. F. O'Neil, Boston.—p. 63.
Three Cases of Hydronephrosis. R. F. O'Neil, Boston.—p. 69.
Gonococcal Infections of Kidney. J. D. Barney, Boston.—p. 79.
Intravenous Injection of Neo-Arsphenamin in Treatment of Pyelitis. C. H. Chetwood, New York.—p. 87.

Study of Chemicals Used in Pyelography.—Of all the fifteen chemicals investigated by Lowsley and Muller, sodium iodid, in 20 per cent. solution, proved to be the most graphic medium. It casts a deep shadow, is nontoxic, nonirritating and is easily prepared. The authors caution that pyelography should be done only in selected cases. Persons suffering from acute or subacute infections of the kidneys, those who are emaciated or in a weakened condition, should not be subjected to this examination. The solution should be introduced carefully. When the patient complains of a sense of pressure in the loin, a few drops should be released in order to avoid distention of the kidney pelvis, as experiments on animals have shown distention to cause definite damage to the renal tissue. The practice of placing the patient in a sitting posture and withdrawing the catheter as the sodium iodid is injected and then immediately taking a roentgenogram was found to bring out many lesions of the ureters which would otherwise not be demonstrated.

Perirenal Insufflation of Oxygen.—The value of the perirenal insufflation of oxygen as a diagnostic measure is fully appreciated by Quinby, but his experience has shown that in the usual case the presence of gas about the kidney does not give plates of any greater value. In the occasional case, however, when the patient is large and fat, or in those instances in which the ureter is blocked by stone, or when for any other reason it is found impossible to inject the kidney pelvis at all, a knowledge of the kidney outline, made possible by the injection of gas, is often of distinct value.

Value of Colloidal Silver Chlorid as Germicide.—Ballenger and Elder report further on their experimental work with colloidal silver chlorid as a germicide. The preliminary work so far done shows its harmlessness when used on inflamed surfaces and that, in certain conditions, it may be given intravenously in effective doses.

Kentucky Medical Journal, Bowling Green

January, 1923, **21**, No. 1

Dr. J. N. McCormack in His Relation to Medical Profession. D. M. Griffith, Owensboro.—p. 9.
Dr. J. N. McCormack in His Relation to General Public. J. C. W. Beckham, Louisville.—p. 11.
Dr. J. N. McCormack as a Man. J. A. Stucky, Lexington.—p. 13.
Dr. J. N. McCormack in His Relation to American Medical Association. C. A. L. Reed, Cincinnati.—p. 14.

Mental Hygiene, Albany, N. Y.

January, 1923, **7**, No. 1

Aspects of Animal Mechanism. C. S. Sherrington, London.—p. 1.
Methods of Evaluating Our Immigrant Peoples. K. H. Claghorn, New York.—p. 20.
Psychoanalysis and The School. H. C. Miller, London.—p. 32.
Significance and Management of Hypochondriacal Trends in Children. E. L. Richards, Baltimore.—p. 43.
Study of the Underwear Industry with Special Reference to Opportunities for Subnormal Girls. J. D. MacAlpine, New York.—p. 70.
Affective Factors in Vocational Maladjustment. L. Pruette and D. Freyer, Brooklyn.—p. 102.
Organization and Scope of State Bureau of Mental Health. W. C. Sandy, New York.—p. 118.
Nurses' Training Schools in State Hospitals. C. F. Read and M. Kennedy, Chicago.—p. 127.
Mental Health of 463 Children from Dementia Praecox Stock. M. M. Canavan and R. Clark.—p. 137.
Organization of Occupational Therapy in State Hospital. H. M. Pollock, New York.—p. 149.

Northwest Medicine, Seattle

January, 1923, **22**, No. 1

Modern Aspects of Etiology and Treatment of Bronchial Asthma. G. Piness, Los Angeles, Calif.—p. 1.
*Treatment of Pneumonia. H. Brooks, New York.—p. 10.
Treatment of Advanced Tuberculosis. J. E. Nelson, Seattle.—p. 17.
Adult Type Tuberculosis in Children. C. R. Castlen, Seattle.—p. 21.
Vomiting in Infancy and Childhood. P. D. McCornack, Spokane.—p. 24.
*End-to-End Intestinal Anastomosis. Experimental Study. D. V. Trueblood, Seattle.—p. 27.

Drugs in Treatment of Pneumonia.—In Brooks' opinion, as a rule, few or no drugs are required in most cases of pneumonia; with one exception he feels that the need for medication must appear before any drug is advisedly prescribed. There is, however, one drug which he believes should by preference be given before it is needed. This is digitalis. To get the best effect from digitalis it must be given before the heart muscle is either in a state of inflammation or degenerated. In the pneumonias of infants and children, he employs the drug infrequently, but as age increases, he uses it with increasing frequency and dosage. As a rule, he starts with full dosage, 15 or 20 minims of the tincture every two or three hours, for the first twenty-four hours, and follows with a rapid reduction unless the case demands otherwise. In cases of known cardiac defect, Brooks often digitalizes by the rapid method, 30 or 40 minims three or four times daily until digitalis effects are produced. When the muscle irritability appears to be impaired, Brooks may use strychnin with the digitalis. Caffein is his drug of second choice in instances of circulatory failure in pneumonia. He advises against its employment in cases of active delirium and in those instances in which sleep appears to be very necessary. Camphor is also a very useful drug, preferably, of course, given intramuscularly or subcutaneously. Epinephrin is used especially in cases with marked hypotension, that appear to be going into shock or collapse. All these drugs are employed for symptomatic reasons and few or none, except, perhaps, the digitalis, in anything like a routine manner. When cough is particularly annoying or exhausting, it should be controlled, if possible, by codein, heroin or morphin in the order named. Brooks emphasizes the fact that the greatest danger is, overtreatment, rather than undertreatment, and that each case is an individual problem.

New Method of Intestinal Anastomsis.—Trueblood describes an aseptic method of anastomotic suture in which the openings are all closed by basting threads, which are withdrawn after the anastomosis has been completed.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

Archives of Radiology and Electrotherapy, London

January, 1923, **27**, No. 8

Barium Plaster Walls for Roentgen-Ray Treatment Cubicles. A. E. Barclay.—p. 234.
*Hitherto Undescribed Bone in Tarsus. P. D. Cameron.—p. 234.
*Separate Center of Ossification for Tip of Internal Malleolus. H. A. T. Fairbank.—p. 238.
Fibrocystic Disease of Upper End of Humerus. C. P. G. Wakeley.—p. 241.
Simple Method of Treating Superficial Lesions of Perineum and Intrapelvic Conditions from Below. M. R. J. Hayes.—p. 249.

Undescribed Bone in Tarsus.—The bone described by Cameron formed a distinct projection on the inner side of the foot, in the angle between the scaphoid and internal cuneiform bones. In the same foot there was a quite definite tibiale externum in close contact with the head of the astragalus, between the scaphoid and the sustentaculum tali. Neither of the extra bones was present in the foot of the opposite side.

Separate Center of Ossification for Tip of Internal Malleolus.—Fairbank reports three cases in which there was a separate center of ossification for the tip of the internal malleolus. He suggests that it is possible that the separate ossific center has been regarded as a sesamoid bone; sometimes, perhaps, a fracture has been diagnosed.

British Journal of Ophthalmology, London

January, 1923, **7**, No. 1

British Master of Ophthalmology Series. 13. Edward Nettleship. J. B. Lawford.—p. 1.
*Cases of Metastatic Carcinoma of Choroid and Iris. C. H. Usher.—p. 10.

February, 1923, **7**, No. 2

Statistical Enquiry into 1,000 Cases of Eye Injuries. A. Garrow.—p. 65.
Method of Recording Disc Alterations and Study of Growth of Normal and Abnormal Disc Cups. R. Pickard.—p. 81.

Metastatic Carcinoma of Choroid.—In one of the cases reported by Usher the primary tumor was not discovered, as permission for a necropsy was refused, and the general symptoms had not been sufficiently localizing. In the second case the primary tumor was in the breast, the eye symptoms manifesting themselves about eight months after removal of the breast. In the third case the lung was the seat of the primary tumor.

British Journal of Surgery, Bristol

January, 1923, **10**, No. 39

Eponyms. VII. Percivall Pott: His Own Fracture. D'Arcy Power.—p. 313.
*Abnormalities of Duodenum. J. H. Anderson.—p. 316.
*Large Myeloid Sarcoma (Myeloma) of Radius in Which Tumor is White Throughout. M. J. Stewart.—p. 322.
Cystoscopic Appearances in Tuberculosis of Urinary Tract. W. G. Ball.—p. 326.
*Acormous Embryoma, Consisting of Hydrocephalic Fetal Head Contained Within Ovarian Cyst, in a Child 2½ Years of Age: Ovariotomy. C. E. Shattock.—p. 334.
*Studies in Gallbladder Pathology. W. Boyd.—p. 337.
Roentgenogram Prints: A Suggestion. A. P. Bertwistle.—p. 357.
Mayo and Crile Clinics: With Special Reference to Thyroid Surgery. W. H. Bowen.—p. 359.
*Method of Ligaturing First Stage of Left Subclavian Artery from Behind. A. K. Henry.—p. 367.
Place of Operations for Spinal Fixation in Treatment of Pott's Disease. G. R. Girdlestone.—p. 372.
Phosphorus Necrosis of Mandible. H. P. Pickerill.—p. 380.
Vesalius: His Delineation of Framework of Human Body in "Fabrica" and "Epitome." W. G. Spencer.—p. 383.
Effect of Gastro-Enterostomy on Gastric Function, as Interpreted by Fractional Test Meal. E. F. Guy.—p. 403.
Congenital Cyst of Common Bile Duct: Report of Two Cases. J. Morley.—p. 413.
Acute Hemorrhagic Pancreatitis: Ascaris Lumbricoides in Pancreatic Duct. H. M. Rigby.—p. 419.
Partial Obstruction of Pancreatic Duct by Round Worms. Novis.—p. 421.
Intestinal Obstruction from Hydronephrosis in Pelvic Kidney. H. T. Mursell.—p. 421.
Pelvic Hematocele in Male, Unnoticed Until Infected from Intestine. W. G. Spencer.—p. 423.
Endothelioma of Left Kidney Extending Down Ureter and Projecting into Bladder: Removal: Death Four Months Later. W. G. Spencer.—p. 423.
Large Intraperitoneal (Parovarian) Cyst Disappearing After Drainage. W. G. Spencer.—p. 424.
Two Cases of Ruptured Sigmoid Colon. R. M. Handfield-Jones.—p. 425.

Abnormalities of Duodenum.—It is Anderson's belief that gross anatomic abnormalities of the duodenum are more frequent than is generally supposed, and such abnormalities may exist without producing any clinical evidence of their presence.

Myeloid Sarcoma of Radius.—A case of myeloid sarcoma of the lower end of the radius is reported by Stewart in which the tumor, measuring 2½ by 1½ inches, was white throughout. The patient was aged 6 years, and the swelling had first been noticed three years before. As the tumor had burst through its bony capsule over a large area and was extensively invading the soft tissues, treatment by amputation was decided on, and carried out. Histologically, the growth was a typical myeloid sarcoma (myeloma). The axillary glands on the affected side were enlarged, but had completely subsided by the time the patient was discharged from hospital.

Acormous Embryoma.—Shattock removed a diseased ovary from a child, aged 2½ years, who had suffered from indefinite abdominal symptoms for six weeks. The left ovary was enlarged by the growth of an embryoma, which was composed solely of the head of a hydrocephalic fetus and completely filled a cyst in the ovary. The soft, easily separable, hydrocephalic brain measured 5.5 by 3 cm. in chief diameters, and was lined with ependyma through which the subjacent vessels were visible. Below the middle of the distended brain there was an elongated piece of cancellous bone closed in with a layer of compact bone, which may be taken as the basis cranii. Below the bone, and extending behind it as far as the skin, and beneath the brain, there was a triangular mass of young connective tissue and fat, in which microscopic examination demonstrated also the presence of a few islets of cartilage, and a compact, ill defined mass of well developed, intersecting bundles of unstriped muscle fibers. There were also included groups of ganglions furnished with large, typical nerve cells. The skin over the triangular mass of connective tissue already referred to was thickly covered with somewhat stiff dark hair embedded in sebum.

Gallbladder Absorbs Cholesterol.—The study made by Boyd of the gallbladder with the binocular dissecting microscope revealed a new view of the anatomy of the organ, and throws suggestive light on the question of its function. That function, Boyd says, is undoubtedly one of absorption, and it is possible that one of the chief substances absorbed is the cholesterol of the bile. The formation of deposits of cholesterol ester in the mucosa of the gallbladder is an important feature in many cases of early cholecystitis. These deposits occur both in the surface epithelium, in the connective tissue stroma, and possibly in the lymphatics. In some cases, at least, the first step in the development of gallstones may consist in this formation of cholesterol deposits. A new microchemical test for cholesterol in the tissues is described.

Ligaturing Left Subclavian Artery.—An approach to the first stage of the subclavian artery is obtained by Henry by costotransversectomy at the level of the second rib on the left side. Depression of the pleural dome leaves the artery naked from the aorta to the first rib, no structure (excepting the ansa subclavia) intervening between the operator and the vessel. The first stage of the vessel can be ligatured in any part of its course, and its branches, except the thyrocervical trunk, can be tied with relative ease.

Bristol Medico-Chirurgical Journal

January, 1923, **40**, No. 147

Debt of Medicine to the Fine Arts. J. A. Nixon.—p. 1.
Principles of Surgical Treatment of Infections of Peritoneum. F. Fraser.—p. 29.
Acquired Resistance to Tuberculosis: A Factor in Clinical Type and Prognosis. S. L. Cummins.—p. 41.

China Medical Journal, Shanghai

January, 1923, **37**, No. 1

*Use of Plaster Pylon in Leg Amputations. G. Van Gorder.—p. 1.
*Pneumonic Plague in Harbin (Manchurian Epidemic, 1921). J. W. H. Chun.—p. 7.

Congenital Occlusions of Alimentary Tract. Case Reports. E. D. Smith.—p. 18.
Practical Method for Delousing Chinese Clothes and Bedding. S. D. Joffick.—p. 25.
China As Field for Study of Nutrition of Human Teeth. J. F. McClendon.—p. 34.
Necrosis of Jaw. P. L. McAli.—p. 39.
Chronic Erythema Nodosum: Report of Case. W. W. Cadbury.—p. 41.
Preparation of Surgical Solution of Chlorinated Soda. J. Cameron.—p. 44.

Use of Plaster Pylon in Leg Amputations.—Because of the high incidence of joint tuberculosis, gangrene, and severe infections among Chinese patients, many amputations are necessary. The absence of artificial limb factories in China, and the great expense associated with importing appliances from Europe and America, have made the surgical after-treatment of patients with amputated limbs a difficult problem. In order to improve the condition of leg "amputee" cases, Van Gorder says some form of prosthesis should be given to every such patient before he or she is discharged from the hospital. The form of prosthesis recommended by Van Gorder for routine use in the hospital is the so-called "plaster pylon." This form of apparatus is quickly and easily made; the necessary materials are readily available; it is inexpensive, and at the same time effective.

Pneumonic Plague in Harbin.—Chun reviews some features of the epidemic of plague which existed in Harbin in 1921. The death rate was 10 per thousand as contrasted with 90 per thousand in the 1910 epidemic. The scheme of management and the clinical analysis of the cases are detailed. With regard to treatment, nothing was of avail.

Edinburgh Medical Journal

January, 1923, **30**, No. 1

Progress of Medicine and Retarding Influence of Credulity. E. Bramwell.—p. 1.
*Importance and Function of Teres Minor Muscle. D. M. Greig.—p. 16.

Importance and Function of Teres Minor Muscle.—Greig advances the ideas that the teres minor is not a muscle of lateral rotation; that lateral rotation is caused mainly by the infraspinatus; and that the function of the teres minor is to steady the head of the humerus in the glenoid during contraction of the deltoid.

Journal of Laryngology and Otology, Edinburgh

February, 1923, **38**, No. 2

Angioma of Larynx. I. Moore.—p. 57.
Pathologic Effects of Excessive Sounds on Cochlear Apparatus, Considered in Relation to Theories of Sound Perception. T. R. Rodger.—p. 66.
Temporosphenoidal Abscess: Two Cases. F. Muecke.—p. 72.
Unusual Termination (Peritonitis) of Case of Temporosphenoidal Abscess. F. G. Wrigley.—p. 76.
Two Cases of Fatal Osteomyelitis of Frontal Bone. H. Tilley.—p. 78.

Journal of State Medicine, London

January, 1923, **31**, No. 1

Prenatal Hygiene and Problems of Maternity and Child Welfare. W. M. Feldman.—p. 3.
Water Supplies with Reference to Those in Gallipoli Campaign. A. Gaskell.—p. 15.
Milk Problem. H. Scurfield.—p. 28.

February, 1923, **31**, No. 2

Specific and Nonspecific Formation of Antibodies. T. Madsen.—p. 51.
Prevention of Tuberculosis by Injecting Tubercle Bacillus Antigen. W. M. Crofton.—p. 74.
Treatment of Pyorrhea by Violet Ray Concentration (Pashler Lamp). R. Hodgson.—p. 79.
*Problem of Syphilitic Child. M. Rorke.—p. 82.

Problem of Syphilitic Child.—Rorke urges that, given a family history of syphilis, the mother should be treated during each pregnancy, and the child, when born, be instantly put on treatment. She is convinced that, short of absolute idiocy or marked mental defect, a quite considerable proportion of "difficult" and very naughty children are congenital syphilitics. These children are really feebleminded to some extent—at any rate, they are mentally subnormal, though perhaps not certifiable. These are the people who, when grown, crowd workhouses and prisons—the men unfit to keep a job at a living wage, and so inclined to theft and other crimes—the girls frequently immoral, mothers of illegitimate children and members of the pathetic crowd of prostitutes.

Archives des Maladies de l'Appareil Digestif, Paris

November, 1922, **12**, No. 6

*Roentgenography of Bile Passages. Duval et al.—p. 377.

Roentgenography of Bile Passages.—Duval, Gatellier and Béclère remark that the technic of roentgenography has improved so much that the results of their years of concerted study of the bile ducts, with and without gallstones, by internist, surgeon and roentgenologist may soon be surpassed. They state that Chappuis and Chauvel seem to have been the first who examined with the roentgen rays for gallstones. This was in 1896, but Carl Beck of New York was the first to show a gallstone in the gallbladder in 1899. The first unmistakable roentgenogram of a calculus in the common bile duct was secured by H. Béclère in 1919. Their long article is accompanied by eighty-six roentgenograms and explanatory diagrams. They insist that the roentgenologist should get with the patient a detailed clinical record of his pathologic past and the diagnosis that has been made. The radiologist should know whether the assumed gallstones are causing manifestations in the gallbladder or in the stomach and duodenum; whether the lithiasis is aseptic; whether the cholesterin content of the blood is normal, and whether the concretion is possibly or probably in the main bile duct. The gallstones may cast a shadow in one test and not in another, as the adjacent organs happen to contain more or less gaseous or solid contents. The findings are instructive only in about 60 per cent. of the cases at best.

Bulletin de l'Académie de Médecine, Paris

Jan. 9, 1923, **89**, No. 2

*Medical Examination of Chauffeurs.—p. 47.
*Incontinence Due to Spina Bifida. P. Delbet and A. Léri.—p. 49.
*Diabetes and Syphilis. M. Labbé.—p. 53.
*Cholesterinemia in Diabetes. Remond and Rouzaud.—p. 60.
*Vitamins and Cereal Decoctions. M. Springer.—p. 61.

Report on Medical Examination of Chauffeurs.—The academy adopted the resolution of a committee composed of Quénu, Tuffier, Vaquez and Fiessinger, recommending the following measures with regard to issuing licenses to persons driving automobiles: (1) The chauffeur must be without exception 20 years old. (2) No license is to be granted to persons with mental disturbances, organic lesions of the heart, vessels or nervous system. Sight and hearing must be examined by a special medical commission. Special rules must be published concerning the degree of the lesions which would make driving inadvisable. (3) Mutilated persons may drive if really able to do so with their prosthesis. (4) The driver must be reexamined after ten years or, in special cases, in three years. (5) The license should be revoked for intoxication, especially if repeated. (6) Every driver who causes an accident must be reexamined immediately.

Incontinence of Urine Due to Spina Bifida.—Delbet and Léri report a case of enuresis with occult spina bifida. They removed a transverse fibrocartilaginous band which compressed the cauda equina, and the patient recovered. The sacral region should be examined by roentgen rays in every case of persistent incontinence of urine. If a spina bifida is found, an operative exploration reaching as deep as the dura mater should be performed.

Diabetes and Syphilis.—Labbé finds that syphilitic diabetes is extremely rare. The coincidence of diabetes and syphilis is no more frequent than syphilis with other diseases or perhaps even in the otherwise healthy. He reviews the usual reasons which would seem to speak for a syphilitic etiology, and finds only one case in the literature in which antisyphilitic treatment certainly cured the diabetes. In his own experience this treatment was without favorable results in seven cases of diabetes with a history of inherited or acquired syphilis.

Prognostic Value of Cholesterinemia in Diabetes.—Remond and Rouzaud found among 189 cases of diabetes, fourteen with cholesterinemia of 3.12 to 8.28 gm. per liter. Only one of these patients survived two years after this finding. The others died much earlier.

Vitamins and Cereal Decoctions.—Springer points out that the new researches on vitamins explain his excellent experimental and therapeutic results with decoctions of cereals in 1894. The experiments concerned their action on the growth

of dogs; and the clinical work was done on wetnurses, babies, and patients with typhoid and tuberculosis. In explaining the results, he had pointed correctly to the low nutritive value of the decoctions and ascribed the action to ferments which favored the production and utilization of intra-organic energy.

Journal de Médecine de Bordeaux

Dec. 25, 1922, **94**, No. 24

*Toxemia in Pregnancy and Antianaphylaxis. L. Charron.—p. 787.
Chaulmoogra in Treatment of Tuberculosis. F. Leuret.—p. 789.
Fight Against Infant Mortality. Rousseau-Saint-Philippe.—p. 790.

Toxemia in Pregnancy and Antianaphylaxis.—Charron relates that a woman had had three pregnancies from three different husbands. Intense toxemia developed at the third pregnancy, and Charron injected the husband's serum on the assumption that, if the intoxication was due to an antigen from the male, the progressive introduction of this antigen would desensitize. Vomiting ceased at once, the pulse dropped from 108 to 80, and the arterial pressure and weight increased. The woman has been in good health since, and Charron expects that her pregnancy will follow its course without incident. He asks in conclusion whether the pregnancy toxins may not be merely toxic proteins from the male. The capricious character of the reaction phenomena could be explained by variations either in the quality of the graft or in the respective relations between the two subjects. In the case described, there had been severe toxemia at the woman's second pregnancy, with her second husband, but not so intense as at this third pregnancy with her third husband.

Jan. 10, 1923, **95**, No. 1

*Medicine in 1870 and Today. X. Arnozan.—p. 7.
Extra Wide Compression Forceps. F. Papin.—p. 18.

Medicine in 1870 and Today.—Arnozan's farewell address at the Faculté de Bordeaux was summarized in the Paris Letter, Feb. 24, p. 566.

Paris Médical

Jan. 6, 1923, **12**, No. 1

Tuberculosis in 1923. P. Lereboullet and L. Petit.—p. 1.
*Nontuberculous Pleurisy in the Tuberculous. E. Sergent and Durand. —p. 14.
*Tuberculosis in Nurslings. P. Nobécourt and J. Paraf.—p. 18.
*Tuberculosis and Pregnancy. L. Bernard.—p. 22.
*Control of Treatment of Tuberculosis. A. Gaussel.—p. 27.
*Phlebitis in Incipient Pulmonary Tuberculosis. Lafforgue.—p. 30.

Nontuberculous Interlobar Pleurisy in the Tuberculous.—Sergent and Durand point out that the fissure between the lobes is of distinct pathologic importance in tuberculosis of the lungs. Three sorts of syndromes can be observed: affections located in the fissure (interlobar pleurisy); affections practically restricted to the parenchyma adjoining the fissure, and lobar syndromes where the fissure serves as a barrier. They describe the purulent (nontuberculous) interlobar pleurisy which may occur in the tuberculous just as in otherwise healthy subjects. Since this origin is of special prognostic importance, they publish two observations. The roentgen-ray examination gives the typical picture of a localized pyopneumothorax. Contrary to such a condition in nontuberculous patients, it is usually limited by previous inflammations to a smaller part of the fissure, but differs from a large tuberculous cavity by the mobility of the level of its liquid content and its sudden appearance in a place where there were no signs before. The dark line starting from the cavity in the direction of the interlobar fissure is also a diagnostic point. The sudden appearance of large numbers of pneumococci or streptococci when the abscess perforates, and their disappearance when the purely purulent expectoration stops, are signs which speak for a nontuberculous origin. Recovery is usually prompt. Artificial pneumothorax may be necessary.

Tuberculosis in Infants.—Nobécourt and Paraf found among 1,296 infants 4.6 per cent. with tuberculosis. They believe that a systematic application of biologic tests would reveal many overlooked cases. Fever or respiratory phenomena need not be present, but all cases were more or less hypotrophic. Distinction of dyspeptic, anemic and rachitic forms of tuberculosis is not warranted; these are simply coincidences. The enlargement of supraclavicular lymphatic glands to the size of a pea or hazelnut is important, but not constant. Of all the biologic reactions, a positive tuberculin skin reaction is most important and reliable, unless the infants are anergic or anteallergic (between infection and the time of appearance of antibodies). Clinical diagnosis would in most of the cases be impossible.

Tuberculosis and Pregnancy.—Bernard's views have already been summarized, p. 512.

Rules for Experimentation and Control of New Measures in Treatment of Tuberculosis.—Gaussel gives a skeptical paper on the value of therapeutic observations in tuberculosis: A new sort of treatment is instituted. The physician begins it without waiting for the usual good influence of rest and treatment to become manifest. He reports the wonderful results as due to the remedy applied, and forgets to rectify his report when the patient dies a little later. Many of the best results are obtained in patients who were not tuberculous at all. He proposes the following rules for therapeutic experiment: (1) The new treatment must not start with the arrival of the patient in the hospital. He should first be carefully observed (including roentgen ray examination) for a long period under the ordinary general treatment. (2) There should be three groups of patients: one taking the treatment, one without any treatment, and a third, control group in which the patients are given to believe that they are receiving the same treatment that is being tried on the main group. (3) The treatment must be continued for a long period, and the eventual improvement must not be reported until at least several months later.

Phlebitis in Incipient Pulmonary Tuberculosis.—Lafforgue deals with the rare cases of phlebitis which occur in the early stages of tuberculosis—so early that some of them have been erroneously called pretuberculous. Many cases of supposed chlorotic phlebitis belong to this group, and careful examination may reveal the minor signs of tuberculosis, although not in every case. The affection is usually localized in a superficial vein of the leg, and rarely progresses into the femoral vein. Embolism is rare. The cardinal signs are: pain, which may be preceded by paresthesia; edema, which in some degree is always present and differentiates the condition from myalgia and neuritis; and the palpable and painful inflamed vein. The functional disturbance is small, the sensibility intact, and trophic and vasomotor disturbances are absent. Rest in bed for two or three weeks leads to complete local recovery. Some cases may be due to associated infection, but in some, the direct tuberculous etiology is proved or is very probable because of the doubtful outcome. Local trauma and congenital debility of veins are accessory factors. It seems also that some strains of bacilli are more liable to cause bacillemia. The diagnosis is difficult between chlorotic thrombosis (examination of blood), and a similar syphilitic affection. Although the immediate prognosis is good, these cases have to be considered with great caution as to the ultimate outcome of the tuberculosis. One third of the cases which could be kept under observation, developed miliary tuberculosis within two years (sometimes in a few months). In other cases the original tuberculous lesions ran a progressively more serious course.

Presse Médicale, Paris

Jan. 6, 1923, **31**, No. 2

*Warning Hypertension in Toxemia of Pregnancy. V. Le Lorier.—p. 13.
*Rapid and Profuse Alopecia. R. Sabouraud.—p. 14.
*Hydrocephalus and Its Treatment. C. Lenormant.—p. 18.

Warning Hypertension in Toxemia of Pregnancy.—Le Lorier measured the blood pressure as a routine in pregnant women, and found it a most valuable aid in preventing toxemia. A pressure of 120 mm. mercury is the warning line. If a pressure, which was below this, starts to rise, other symptoms of toxemia may be expected soon if the patient remains without rest and dieting. At 150 mm. mercury, albumin appears in the urine and eclampsia is imminent. Two cases illustrate this course. Since toxemia can usually be prevented by rest and a milk-vegetable, salt-free diet, it is very important to look for this early sign. Midwives should be taught to measure the blood pressure.

The Differential Diagnosis in Cases of Rapid and Profuse Alopecia.—Sabouraud describes cases of profuse alopecia; among them the case of a girl, aged 13, who lost her hair thirteen days after being raped. The hair grew again. Alopecia following roentgen rays and ingestion of thallium occurs also in about fourteen days, while hair killed during an infection (typhoid, etc.) keeps in place for seventy-five days.

Hydrocephalus and Its Treatment.—Lenormant describes the history of surgical treatment of hydrocephalus, and deals especially with Dandy's investigations.

Jan. 10, 1923, **31**, No. 3

*Cancer of the Tongue. R. Proust and A. Maurer.—p. 25.
*Hemoclastic Crisis in Drug Addicts. P. Sollier and D. Morat.—p. 28.

Treatment of Cancer of the Tongue.—Proust and Maurer combine ligation of arteries, extirpation of lymphatic glands and treatment by radium and roentgen rays. They describe the technic, with illustrations.

Hemoclastic Crisis in Drug Addicts.—Sollier and Morat found in a morphin and a heroin addict Widal's hemoclastic test positive. The test remains positive for from twenty to thirty days after stopping the drug, and the negative result is a good indication of recovery. Drug addicts have a hemoclastic crisis after injection of even a small dose of the drug. Therefore a very small injection relieves the severe symptoms after starting treatment, but the drug should never be used later for any reason whatever. Hypnotics cause the same crisis as milk or morphin, and should not be used in drug addicts.

Jan. 13, 1923, **31**, No. 4

*Respiratory Paralysis of the Larynx. Lermoyez and Ramadier.—p. 33.
*Regional Anesthesia of Uterus. G. Cotte.—p. 36.
*Milk Injections and Vaccine Therapy in Gonorrhea. Tansard.—p. 37.
Present Status of Physostigmin as a Heart Tonic. L. Cheinisse.—p. 39.

Paralysis of Dilators of Larynx.—Lermoyez and Ramadier believe that syphilis is the cause of symmetric paresis of the dilators of the larynx—a rule for which they admit very few exceptions. The affection is characterized clinically by a permanent inspiratory dyspnea, with attacks of suffocation which may terminate the life of the patient. The voice is clear. Laryngoscopy reveals the vocal cords in a fixed position near the middle line, leaving only a space of from 1 to 2 mm. between. Inspiration aspirates the cords and makes the passage still narrower. Among six cases, in only one, in which no spinal puncture was allowed, was it not proved to be due to syphilis. This clears up the frequent coincidence with Argyll Robertson pupil and aortic insufficiency. While unilateral paresis of the recurrent nerve is usually caused mechanically by dilatation of the aorta, and may be a very valuable sign of aneurysm, bilateral paralysis is simply a parallel affection ("sister, not daughter"), and the usual forced explanations are superfluous. The probable site of the disease is in the medulla oblongata. The syphilitic etiology gives at least a possibility of treatment. This must be prompt and vigorous, starting with mercury and then following with arsphenamin preparations. Iodids should not be used because they may cause cough. No time should be lost in trying to perfect the diagnosis. The patient who comes with a disturbance which he considers as a simple cold, may be suffocated a few hours later. If treatment is started very early, tracheotomy, which so far has been the only relief, will not be needed so often.

Regional Anesthesia of Uterus.—Cotte anesthetized the uterus by injections into the base of the broad ligaments. Others have already used this method for anesthesia of the vagina and perineum.

Milk Injections and Vaccine Therapy in Gonorrhea.—Tansard injected from 2 to 5 c.c. of milk intramuscularly every other day. The treatment had no effect in acute gonorrhea, but proved very beneficial in all the other manifestations, especially epididymitis and cystitis (ten to twenty injections). When the results were not perfect, he completed treatment with vaccines.

Jan. 31, 1923, **31**, No. 9

*The Jenner Centennial.—p. 97.

The Jenner Centennial. — The *Presse* reproduces the addresses delivered at the Académie de médecine by Achard and Camus. It also gives the facsimile of a letter written by Jenner to congratulate the French for their energy in introducing vaccination into France.

Progrès Médical, Paris

Jan. 13, 1923, **38**, No. 2

*Alimentary Leukocyte Influx into Stomach. Loeper and Marchal.—p. 13.
*Differential Diagnosis of Celialgia. Avierinos and Bourde.—p. 13.
Cold Abscess in Chest Wall. A. Broca.—p. 18.

Alimentary Leukocyte Influx into Stomach.—Loeper and Marchal state that the leukocyte influx into the stomach after ingestion of bouillon is a physiologic reaction. The leukocyte influx reaches higher than 1,000 leukocytes to 1 c.mm. The reaction is autonomous and is independent of other reactions. In hyperchlorhydria, polymorphonuclears predominate, while in hypochlorhydria lymphocytes are abundant and often outnumber the polymorphonuclears. This is pronounced in chronic gastritis and cancer. They will publish later the diagnostic value of these variations.

Diagnosis of Celialgia.—Avierinos and Bourde discuss the diagnosis of celialgia, based on Loeper's study of the subject. They state that its knowledge will be useful to surgeons as it will prevent many unnecessary laparotomies.

Revue Pratique des Maladies des Pays Chauds, Paris

October, 1922, **1**, No. 1

Introduction to Study of Tropical Diseases. G. Reynaud.—p. 1.
*Treatment of Amebiasis. P. Ravaut.—p. 8.
Progress in Treatment of Protozoan Diseases. L. Tanon.—p. 18.
*Gnats in Human Pathology. Neveu-Lemaire.—p. 25.
*Prophylaxis of Skin Cancer. H. Gougerot.—p. 34.
Syphilis and Pregnancy. C. Jeannin.—p. 53.
*Germ Carriers in Tropical Pathology. L. Nattan-Larrier.—p. 57.
*Medicine in Egypt. M. Zeitoun.—p. 72. Cont'd.

The Tropical Diseases Review.—This new journal bears the subtitle "Medicosurgical Egypt." One of the three editors resides at Cairo, one at Morbihan, and one at Paris. The subscription is 75 francs per volume. The editors appeal to physicians in tropical countries to send descriptions of their researches and observations. Address Dr. M. Zeitoun, 32 rue de Gay-Lussac, Paris, France.

Treatment of Amebiasis.—Ravaut describes what he calls the two modes of attack, emetin and arsenicals by injection, and charcoal by the mouth. He emphasizes the necessity for keeping up treatment long after the patient has been apparently cured. As a general thing, he advocates giving the emetin and arsenical both subcutaneously and by the vein in the acute phases, but by mouth and in enemas when the disease has become chronic. For this, he orders a charcoal compound: 100 gm. each of vegetable charcoal, bismuth subnitrate, simple syrup and glycerin, with 4 gm. of pulverized ipecac. This represents about 0.05 gm. of the ipecac powder and 1.25 gm. of bismuth in each teaspoonful. From 3 to 12 teaspoonfuls of this mixture are taken during the day, at mealtime, every second day for twenty days. On alternate days a tablet of 0.10 gm. of neo-arsphenamin is taken instead. From 0.15 to 0.30 gm. of the same arsenical, dissolved in 60 c.c. of boiled water, with or without laudanum, is injected into the rectum on retiring, to be retained all night. Substantial food is imperative and is usually well assimilated, with the exception of eggs, milk and uncooked articles. By changing thus the mode of administration from time to time, and keeping up treatment long enough, a complete cure was always finally realized in his experience.

Gnats in Human Pathology.—Three-day fever and Oriental sore can be transmitted by gnat bites; this is probable also with external leishmaniasis, and possible for Peruvian verruca.

Precancer Conditions.—Gougerot insists on the relative frequency of abortive and rudimentary forms of xeroderma pigmentosum, and reiterates that it is extremely liable to develop into cancer. The pronounced forms are rare; Rouvière in 1922 could find only 192 cases on record. Gougerot, however, has encountered a number of cases in the last fifteen years. Sailors, farmers and roentgenologists are subject to epitheliomatosis which closely resembles typical xeroderma pigmentosum, and the analogy is also striking with senile keratosis on regions exposed to the light.

Gougerot regards the action of sunlight as an important factor in the development of skin cancer. All these affections, he declares, represent merely different phases of this "cancer-breeding radiolucitis." The intensity is determined by the sensitiveness of the skin. Much can be done in prevention. This should include treatment of inherited syphilis, organotherapy as indicated, and protection against sunlight and roentgen rays. A broad brimmed hat, a veil, and colored salves (an absorbent quinin salve or calcium fluorid cream) should be used. The preepitheliomatous lesions in the skin must be systematically destroyed. Radiotherapy is preferable for diffuse epitheliomatous infiltration, but not for warty growths. Pigmented spots should be treated only with electrolysis. Even the gravest cases may be kept under control in infants, children, adults and the senile, by periodical surveillance and prompt treatment. To keep these *radiolucites cancérigènes* under control and prevent their development is the most effectual field for prophylaxis and cure of cancer.

Bacilli Carriers in Tropical Pathology.—Nattan-Larrier comments on the way in which during the World War diphtheria, cerebrospinal meningitis and bacillary dysentery disappeared from the barracks and camps under the vigorous measures applied to seek out and sterilize the chronic carriers. This method of prophylaxis is soon to be applied to sleeping sickness throughout the whole extent of French equatorial Africa. The recent report of Major Jamot of the medical corps covers an area of 100,000 square kilometers. In two years he has examined 89,743 natives, less than 11,000 escaping examination. He was assisted only by two European nurses and ten natives. The death rate has declined 65 per cent., and the blood was found sterile in 598 of the 753 given systematic atoxyl treatment. The mass of the virus in circulation has thus been reduced 80 per cent.

Medicine in Egypt.—Zeitoun describes the foundation of a medical school at Cairo in 1827. Dr. Clot, a French physician, was its initiator under Mehemet Ali, and 1,500 natives were trained in the school. Ninety of the French medical works of the day were translated into Arabic. Bilharz was one of the professors. Clot founded a military hospital, botanical garden and library; in 1827 he inaugurated a course in anatomy, and performed the first necropsy, Zeitoun says, at any point in the Orient in any epoch.

Schweizerische medizinische Wochenschrift, Basel

Jan. 4, 1923, **53**, No. 1

*General Neuroses. H. Sahli.—p. 1.
*Goiters and Their Action on the Blood. F. de Quervain.—p. 10.
*Obstetric Shock. Muret.—p. 14.
Sterilizing of Dressings. W. Silberschmidt.—p. 17.

General Neuroses.—Sahli tries to localize hysteric and neurasthenic symptoms in the brain, and to use the energy standpoint in their differentiation.

Goiters and Their Action on the Blood.—De Quervain with Hara and Branovacky experimented on rats with the serum and thyroid tissue from 119 different cases of goiter. He used the Asher-Streuli-Duran test of the sensitiveness of hyperthyroid rats to lack of oxygen. Normal serum and the serum of cretins had no influence (in some cases the latter increased the resistance), while exophthalmic goiter acted very strongly. The thyroid acted in a similar way, and it was interesting to note that even the thyroid from cretins was not without influence. Serum from cretins to a certain extent neutralized exophthalmic goiter serum. De Quervain believes that the thyroid secretes several substances. These tests seem to prove the presence of one of them in the serum of patients.

Obstetric Shock.—Muret describes a case of shock after delivery. The condition much resembles a large hemorrhage, but it can occur without excessive hemorrhage.

Riforma Medica, Naples

Jan. 1, 1923, **39**, No. 1

Domenico Cotugno, 1736-1822 L. Bianchi.—p. 1.
*Intestinal Putrefaction in Tuberculosis. V. Cassini.—p. 4.
*Epidemic Meningitis. A. Della Cioppa.—p. 7.
Conservation of Iso-Agglutination Property of Erythrocytes. P. Mino.—p. 10.
Mechanism of Wassermann Reaction. P. Rondoni.—p. 11.
Recent Literature on Cardiorenal Syndromes. A. Jappelli.—p. 13.

Intestinal Putrefaction in Tuberculosis.—Cassini studied the elimination of indican and combined sulphuric acid in tuberculous patients. He considers both substances important indications of intestinal putrefaction. The purulent pulmonary process and the increased decomposition of body proteins may contribute to the elimination of these substances. The increase in sulphuric esters in the advanced stage is greater than the increase in total sulphuric acid or sulphur. The elimination of neutral sulphur varies in these patients.

Epidemic Meningitis.—Della Cioppa emphasizes the importance of adenoids as germ carriers. They can be freed from meningococci by applications of a 3 to 5 per cent. solution of iodin in glycerin, or by inhalations of iodin fumes through the nose.

Semana Médica, Buenos Aires

Dec. 21, 1922, **2**, No. 51

*Prophylaxis of Puerperal Infection. Ubaldo Fernández.—p. 1265.
*Pneumococcus Infection in Infants. A. Casaubon.—p. 1268.
Welfare Work for Infants. F. Schweizer.—p. 1285.
Vaginal Access to Hydatid Cysts in Pelvis. A. Chueco.—p. 1288.
*Congenital Dystrophia of Fibro-Elastic Tissues. J. M. Macera.—p. 1291.
Obstetrics and Gynecology from Industrial Standpoint. J. B. González.—p. 1294.
The Chlorophyl Function in Plasmogenesis. A. L. Herrera.—p. 1319.

Prophylaxis of Puerperal Infection.—Ubaldo Fernández insists that in obstetrics the danger is from without; all the favorable elements are in the parturient herself. He describes how the application of this principle at the Alvear Hospital has given a morbidity in ten years of only 1 per cent. of women entering the hospital before the onset of labor; 3.8 per cent. after labor has begun. The average for the two groups is 2 per cent. The mortality has been 0.09 and 0.35, with an average for the two groups of 0.18 per cent.

Pneumococcus Infection in Young Children.—Casaubon gives an exhaustive summary of the present status of knowledge on this subject. He reports the details of six cases of purulent pleurisy with pneumonia in infants from 9 to 30 months old, all recovering under treatment by repeated puncture and aspiration of the pus. The total thus evacuated ranged from 20 to 780 gm. A 5 per cent. solution of methylene blue was injected. The infants were kept under the closest supervision, ready to call in the surgeon any moment, but all recovered without this, in from nine to fifty-five days. In cases of pneumococcus sepsis, blood can be obtained for examination from the veins in the neck or longitudinal sinus. These are also available routes for injecting the antiserum. Injection directly into the focus is a useful adjuvant, the lung excepted; local injection is dangerous in the lung. The great tendency in young children for pneumococcus meningitis to become partitioned off, justifies injection of the antiserum into the ventricles as well as intraspinally.

Dystrophy of Fibro-Elastic Tissue.—Macera ascribes to this general cause the congenital huge inguinal and umbilical hernia and pneumocele in a male infant. The apex of the lung on each side extends to the junction of the lower and middle thirds of the neck. The sternoclavicular ligaments are so small and loose that there is habitual subluxation of this joint. The father is 48 years of age, the mother 46, and there is nothing to suggest syphilis in the family, but another child has an inguinal hernia.

Siglo Médico, Madrid

Dec. 23, 1922, **70**, No. 3602

*The Oldest Known Case of Addison's Disease. G. Marañon.—p. 605.
The Bacteriologic Work of Pasteur. R. Turró.—p. 606.
Ultraviolet Rays in Treatment of Rickets. J. and V. García Donato.—p. 610.
Syndromes of the Centrum Ovale. C. Juarros.—p. 614. Conc'n.

The Oldest Known Case of Addison's Disease.—Marañon reproduces the description by a priest in the sixteenth century of the sickness of a young priest who died three years after the first symptoms. They developed after a fright; the building was struck by lightning and burned. The lay description portrays Addison's disease perfectly, but the pigmentation was ascribed to "smoke getting into the system during the fire." Marañon cites modern instances of an

emotional origin. One of his patients developed the disease after seeing his child killed by a street car.

Dec. 30, 1922, **70**, No. 3603

Epileptic Equivalents of Oniric Impulsive Type. A. Fernández-Victorio.—p. 633.
*Strangulated Scrotal Hernia. Ramiro Arroyo.—p. 635.
Gastro-Intestinal Disturbances in Children. F. García Martínez.—p. 636. Cont'n.
Medicolegal Study of Abdominal Wounds. J. Parra Eytier.—p. 641.

Jan. 20, 1923, **71**, No. 3606

Tabes with Few Symptoms. J. M. de Villaverde.—p. 49.
Pathogenesis of Cholelithiasis. C. Blanco Soler.—p. 53. Cont'd.

Strangulated Scrotal Hernia.—The hernia occurred suddenly while the man was lifting a heavy weight. It was of the peritoneum-vaginalis type, without any hernial sac, and it became strangulated at once. The quantity of fluid in the peritoneum and vaginalis suggested that there had been some cyst formation, the rupture of which had suddenly entailed the hernia.

Deutsches Archiv für klinische Medizin, Leipzig

Nov. 21, 1922, **141**, No. 1-2

*Renal Hypertrophy of the Heart. L. Braun.—p. 1.
*Encephalography. E. Schott and J. Eitel.—p. 16.
*Polycythemia Rubra. K. Gutzeit.—p. 30.
*Pressure in Pleural Cavity. G. Ganter.—p. 68.
*Action of Endocrines on Serum Calcium. H. Leicher.—p. 85.
Improved Method of Oscillography. S. Hediger.—p. 117.

The Kidney Factor in High Blood Pressure.—Braun considers experimental hydronephrosis as one of the best methods to induce hypertrophy of the heart. He mentions three necropsies which he considers instructive instances of this. He reviews the mechanism of this process, and believes that the origin of the vascular changes in renal sclerosis is also down stream from the glomeruli, in the secreting tissue of the kidneys. The circulation influences the secretion, but the secretion of urine can cause changes in the blood circulation.

Encephalography.—Schott and Eitel publish the results of their investigations on an anatomic model, on cadavers, and persons with and without brain lesions. After they found in one case that the insufflated air remained for twelve days in the ventricles of the brain, they used oxygen, which is resorbed much quicker. Yet the other very disagreeable symptoms remained, and were so severe that they advise limiting such investigations to cadavers. The diagnostic results are too insignificant in comparison with the disturbances caused by the method.

Polycythemia Rubra.—Gutzeit publishes clinical histories of five idiopathic cases and adds four others in which the polycythemia was due to other diseases. Some of his cases developed after infections, although the history pointed toward a previous latent polycythemia. The young son of one patient suffers from lymphatic leukemia. Investigations among the members of such families reveal sometimes latent polycythemia, although such persons may look rather "anemic." Two cases had a very protracted coagulation time, due to diminution of fibrinogen and thrombokinase. Several cases had a lowered osmotic resistance and a low nitrogen content in the erythrocytes. In one case which presented hypertension and normal spleen at first, the blood pressure later became normal, but the spleen was enlarged. Thus a polycythemia of the Gaisböck type changed into the Vaquez type, showing that probably neither of the distinguishing signs is essential.

Pressure in Pleural Cavity and Its Influence on Site and Shape of Exudates.—Ganter studied on a model and on patients the pressure within the pleural cavity, and proved that it differs in different parts of the pleura. This is due to the fact that the elasticity of the lungs is not uniform. These differences in pressure account for the well known parabolic upper limit of exudates; they cannot follow merely their gravity and do not change their level quickly. If the tension of the lungs is put out of play by pneumothorax or in a smaller degree by loss of elasticity (emphysema), free fluid in the cavity has a horizontal level. The lobes of the lungs keep together as long as there is no infiltration. If, however, the elasticity of the lower lobe is affected by pneumonia, the difference in pressure at the upper border of the left lobe allows the fluid to accumulate between the lobes.

Action of Endocrines on Serum Calcium.—Leicher used de Waard's method, and determined the calcium as Ca ion. He found in sixty healthy individuals a remarkable constancy among persons of the same age. The average in the first 20 years is 10.6 mg. in 100 c.c. of serum. From 20 to 30 the average was 11.5 mg.; then it decreased, at first (to 45 years) slowly, then quicker down to 10.8 mg. in persons over 50 years of age. The calcium content of the whole blood decreases quickly in the first 20 years (from 12 to 9), and presents another smaller diminution between 45 and 54. The amount of calcium in the serum does not change after ingestion of calcium salts prolonged for several weeks (20 persons), but is lowered by thyroid treatment, injections of pituitary extracts, and epinephrin. Exophthalmic goiter and especially tetany had a lower, myxedema a higher calcium content. No constant changes could be found under the influence of the sex glands, but it seems that pregnant women often have an abnormally low level in pathologic conditions.

Deutsche medizinische Wochenschrift, Berlin

Jan. 5, 1923, **49**, No. 1

Tuberculosis and Pregnancy. G. Winter and W. Oppermann.—p. 1.
*Pathogenesis of Carcinoma of Stomach. Askanazy.—p. 3. Cont'd.
*Treatment of Glaucoma. W. Uhthoff.—p. 6.
*Action of Alcohol on Acidity of Gastric Juice. K. Frehse.—p. 11.
*Pituitary Obesity. H. W. Knipping.—p. 12.
Diathermy in Surgery. H. Picard.—p. 13.
*Respiration of the Skin. O. Gans.—p. 16.
Acriflavin in Endocarditis. H. Mark and L. Olesker.—p. 17.
*Life Saving by Ventral Decubitus. E. Rautenberg.—p. 17.
*Catheterization of Trachea in the New-Born. H. Kritzler.—p. 18.
A Rare Injury in First Cohabitation. J. Friedemann.—p. 19.
*Labor with Flat Pelvis. M. Henkel.—p. 19.
*Compulsory Vaccination and Blindness in Smallpox. Hess.—p. 21.

Pathogenesis of Carcinoma of Stomach.—Askanazy mentions the importance of adenomas in chronic gastritis, and of ulcers, for the genesis of carcinoma, and deals chiefly with the origin of malignant tumors from heterotopic embryonal remnants in the gastric wall.

Treatment of Glaucoma.—Uhthoff reviews the problem and treatment of glaucoma. The chief point is the increase in intra-ocular pressure, with its deleterious influence, even if it occurs only in attacks as in simple glaucoma. Repeated measuring of the tension will reveal the increase, and it is suggested by the dimmed rainbow vision. Miotics relieve the tension, and may in rare instances even cure the process. They are indicated in chronic simple glaucoma. They are especially important in the pure noninflammatory cases, because the results of operation are not good in this condition. General treatment has hardly any influence, since the affection is purely local. He deals extensively with the surgical proceedings and recommends iridectomy, although the process progresses even after operation in about 5 per cent. of the cases. Some cases of severe myopia suffer from chronic glaucoma, which can be easily overlooked if examination of the field of vision is omitted.

Action of Alcohol on Acidity of Gastric Juice.—Frehse studied in 132 cases the influence of an addition of 2.5 or 10 per cent. of alcohol to Ewald's test meal. In healthy persons the acidity did not change. In most cases of ulcer, the acidity was lowered, while it was usually increased in nervous dyspepsia.

Pituitary Obesity.—Knipping continued on nineteen patients Plaut's investigation of the specific dynamic action of food in obesity. In most of these patients, although not all, other signs of pituitary disturbance were present. In two of them a preparation of the anterior lobe of pituitary was administered, and an increase of the specific dynamic action of food resulted. Two dogs with a partially destroyed anterior lobe showed the same influence of the preparation.

Respiration of the Skin.—Gans studied the oxygen consumption of small particles of healthy and pathologic skin, and found a parallelism between the rate of oxygen consumption and the sensitivity to roentgen rays.

Life Saving by Ventral Decubitus.—Rautenberg recommends a position on the chest and abdomen, with the foot of the bed raised, similar to the position used in reviving the drowned, in cases of edema of the lungs and in pneumonia in

the stage of lysis. Hypostatic pneumonia is also well influenced or prevented with this posture. The same mechanical principles are involved as in resuscitating the drowned.

Technic of Catheterization of Trachea in the New-Born.—Kritzler uses exclusively soft catheters in which a semi-elastic bougie may be inserted. In order to pass the instrument into the trachea and not, as often happens, into the esophagus, it is advisable to introduce the index finger into the latter.

Labor with Flat Pelvis.—Henkel warns very emphatically against indiscriminate use of forceps. It is a mistake to believe that forceps can overcome a serious disproportion between head and pelvis. It should be used only when the disproportion has already been overcome by natural forces. Other indications and contraindications should be also kept in mind. If from six to eight regular tractions are without result, perforation of the head should be performed. Version after a forceps attempt is malpractice. If version is successful, there is no indication for forceps. If it is not, it is a useless danger for mother and infant. Unsuccessful forceps attempts should be followed by perforation; unsuccessful version by embryotomy. Induced premature delivery, and especially symphysiotomy and pubiotomy, should be abandoned in favor of cesarean section.

Blindness in Smallpox.—Hess calls attention to the great number of blind people after smallpox in countries without compulsory vaccination.

Münchener medizinische Wochenschrift, Munich

Jan. 5, 1923, **70**, No. 1

*Blood Pressure. F. Müller.—p. 1.
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Suit for Alleged Obstetric Malpractice. A. Döderlein.—p. 20.
Semmelweis and Lister. W. v. Brunn.—p. 22.
Symptomatic Changes of Blood. P. Morawitz.—p. 23.
German Youth Welfare Law. M. Thumm.—p. 25.
*Types Seen by Pediatricians. E. Moro.—p. 26.

Blood Pressure.—Müller reviews the history of blood pressure determination, and emphasizes its central regulation. Expelling the blood from a lower extremity does not change the blood pressure, even in cases with hypertension. The peripheral resistance (smallest arteries and capillaries) and not the central force (heart) determines the blood pressure. In cases of genuine hypertension, the tunica media of all small abdominal arteries is hypertrophic from increased function (Huchard's presclerosis). This accounts for the fact that considerable hypertension may become normal. Arteriosclerotic changes of the vessels are secondary. Affections of kidneys leading to insufficiency—even retention of urine—have an unquestionable influence. Further, the constitution may play a part. He finds in the families of such patients migraine, asthma, gout, diabetes and arthritis. Women suffering from uterine fibroids have usually a high blood pressure, which may diminish after operation (not after roentgen-ray treatment). The prognosis is not as bad as we thought before measurement of blood pressure became universal. Digitalis and caffein may be given if the heart becomes insufficient, and may even lower the blood pressure. Coffee and tea are allowed; nicotin and wine must be forbidden. Low diet may be tried although the general starvation during the war did not seem to influence hypertension. Moderate exercise is to be recommended. Venesections act symptomatically well. Hypertension is not a contraindication to any operation.

Colloid Treatment and Active Mesenchymatous Tissue.—Siegmund found that the "storage" of different colloidal preparations in reticulo-endothelial cells increases the resistance of mice against a subsequent infection. He found that the mesenchymatous tissue, which stores these substances, becomes more capable of taking up a new supply—including bacilli—and that it proliferates. Organoid structures develop in the adventitial tissue. They consist of reticular cells capable of storage, and an indifferent hemopoietic parenchyma, which may develop into different cells according to the substance injected. Silver induces chiefly myeloid formations; iron, myeloid-erythroplastic elements; proteins cause a lymphocytic, and cholesterol an endothelial proliferation. The action of colloids consists in stimulating these cells to greater activity.

Postoperative Irradiation of Cancer.—Winter finds that his results with carcinoma irradiated after operation are a little better than in cases without after-treatment. The dosage requires further study.

Treatment of Urethral Gonorrhea in Women.—Arneth and Fabritius emphasize the importance of energetic treatment of urethral gonorrhea in women, even when the chief focus is in the cervix, which must be treated mildly.

Indications for Thyroidectomy.—Lebsche points out that the patient suffering from goiter, and not the thyroid itself, is the subject of treatment. Persons who previously had rachitis are very liable to postoperative tetany. In thyrotoxic heart disturbances, it is better to wait until rest and sedatives have improved the condition. True "goiter heart" is ameliorated by operation. Patients with compression of the trachea should be treated surgically. Sometimes the dyspneic condition is latent, because the patient has learned by instinct to avoid overexertion, until an attack of suffocation convinces him of the necessity for an operation. There is no question about the treatment of a malignant struma; cancer is to be suspected, if a goiter starts to grow quickly in old people. The most difficult decision is in children with vascular goiter in which the clinical signs (not only the histologic changes), speak for an exophthalmic goiter, while the aspect of the patient reveals cretinoid stigmas. Determination of the basal metabolism is a valuable aid in such cases. No goiter should be operated on merely for cosmetic reasons.

Surgical Treatment of Gastroptosis.—Pust has devised a simple longitudinal folding of the stomach, and reports twelve good results.

Types Seen by Pediatricians.—Moro complains that the consulting pediatrician has to deal almost exclusively with neuropathic children. He describes several types. Increased temperature is sometimes simply due to preceding exertion. Some children have permanent rectal temperatures between 37 and 37.8 C. Opium lowers this harmless "constitutional subfebrile state," but pyramidon has no effect. Fever reacts in the opposite way. In vasolabile children the difference in the pulse in standing and reclining is great, and increases after exertion; the rate in reclining may be even lower than before. "Umbilical colic" is usually associated with pallor during the attack. Most cases can be cured by suggestion. The faradic current works wonders in these cases of neurosis, and indifferent plasters applied with the proper suggestion are effective. The child should not be present during the whole taking of the history, and should not hear the diagnosis, unless it is negative.

Wiener klinische Wochenschrift, Vienna

Jan. 4, 1923, **36**, No. 1

*Organotherapy in Neuroses and Psychoses. Wagner-Jauregg.—p. 1.
Capillary and Parenchymatous Bleeding. P. Albrecht.—p. 4.
*Jarisch-Herxheimer Reaction. M. Oppenheim.—p. 7.
*Wassermann Reaction in Cancer of Uterus. R. Niedermayr.—p. 10.
The Epiglottis in Total Extirpation of Larynx. K. Kofler.—p. 11.
History of Vienna Medical School. M. Heitler.—p. 12.

Organotherapy in Neuroses and Psychoses.—Wagner-Jauregg recommends thyroid treatment in every case of retarded development of children. If a tumor of the pituitary is combined with a goiter or symptoms of hypothyroidism, thyroid tablets may improve the pituitary condition, and even the hemianopia may be favorably influenced. Dementia praecox is a group of diseases. The use of thyroid and sex gland has sometimes a favorable influence in the early stages of the hebephrenic type. Yet one should not forget in considering hypofunction and hyperfunction of glands that

qualitative changes (dysfunction) are possible. Complete recovery followed this treatment only in girls in whom the psychosis started at puberty and sex development had been arrested in the infantile stage. Similar good results were obtained in nervous girls with hypoplastic uterus who started to menstruate very late. Tics of the pubertal age were also favorably influenced.

The Jarisch-Herxheimer Reaction.—Oppenheim had 128 cases of Jarisch-Herxheimer reaction among 180 cases of syphilitic exanthemas. He observed them for two years and found that the cases which showed an intense reaction had an unfavorable course with regard to recurrences, their localization (liver, eyes, nerves), and the Wassermann reaction. Cases of tabes which have severe pains after injections of arsphenamin, are progressing. Similar reactions (dizziness, hallucinations) can occur in general paralysis. He found that mercury and arsphenamin are retained longer in the body after a strong Herxheimer reaction. To avoid these reactions, it is well (except in the abortive treatment) to start with mercury ointment or with small doses of mercury, before giving arsphenamin.

Wassermann and Meinicke's Reaction in Cancer of Uterus.—Niedermayr found among twenty-five cases of carcinoma of the sex apparatus one cachectic case with a positive Meinicke test and a weak positive Wassermann test with inactivated serum (negative with active serum). One case had a positive reaction after roentgen treatment.

Zentralblatt für Gynäkologie, Leipzig

Jan. 6, 1923, **47**, No. 1

Graviditas Ovarica, Graviditas Fimbriae Ovaricae and Graviditas Paratubaria. O. Hochne.—p. 2.
*Parabiosis in Experimental Research. R. Nissen.—p. 11.
*Irradiation of the Spleen. L. Nürnberger.—p. 19.
*Treatment of Vulvar Pruritus. A. Littauer.—p. 25.
*Intraligamentous Ganglioneuroma. W. Stoeckel.—p. 33.
Enormous Cystoma. P. Weischer.—p. 37.

Parabiosis as a Means of Experimental Research in Sex Pathology.—Nissen has found parabiosis applied to rats and rabbits a valuable experimental method of research in studying certain questions of sex pathology. His experiments make it seem possible that the bodily changes in the female in pregnancy are not caused by hormones but by nervous impulses. On the other hand, the Sauerbruch-Heyde researches furnish evidence that the inauguration of labor pains is brought about by metabolic products which pass, in accordance with the humoral theory, from the fetus to the mother. Owing to the short existence of animals united by parabiosis, the difficulties of the investigations are very great.

Irradiation of the Spleen in Gynecologic Hemorrhage.—Nürnberger reports that he tried roentgen irradiation in twelve cases of hemorrhage due to tumors of the adnexa and thirteen cases of hemorrhage of ovarian origin. In eight of the former and ten of the latter, the hemorrhage was arrested within three days, frequently on the day of the irradiation, and in a few cases within half an hour of the application. He therefore regards roentgen irradiation of the spleen as a valuable therapeutic measure in the treatment of hemorrhage of genital origin. In some cases irradiation is of no avail, but these cases promise valuable physiologic, pathologic and therapeutic discoveries.

Treatment of Vulvar Pruritus with Special Consideration of Thrush and Trichomonas.—Littauer states that in cases of vulvar pruritus in the form of an oozing eczema the use of ointments usually causes an exacerbation. The best results are secured by dry treatment. The hot air jet and phototherapy, especially red light, are efficacious, but if the secretion has subsided, it is better to use blue light, which is also to be recommended in pruritus without eczema. For treating excoriations of the skin after the oozing has ceased, he finds 10 per cent. silver nitrate solution the sovereign remedy; this requires much patience on the part of the patient and physician but gives excellent results. In a few refractory cases of vulvar pruritus, extirpation of the vulva is the last resort. The operation presents no technical difficulties, and can be performed under local anesthesia. The labia majora et minora, together with the clitoris, are removed. The hemorrhage is easily controlled, if all the tissue to be removed is not excised at once. The excision is best begun from below. The plastic result is very good, and superficial examination would not reveal any change of the introitus following the operation. Even excision does not help in all cases, especially if the cause of the pruritus is elsewhere than in the tissues removed. Another cause of vulvar pruritus is thrush *(Monilia albicans)*, which sometimes requires careful inspection for its recognition. Treatment consists in painting the affected area every other day with a 10 per cent. solution of pyoktanin, which unfortunately stains the clothing for a time. In some cases he has found roentgen irradiation effective. *Oxyuris* or *Trichomonas* infection may also be suspected.

Intraligamentous Ganglioneuroma.—Stoeckel reports what seems to be the first operative case of ganglioneuroma of the true pelvis in a woman. These tumors are comparatively rare, only about two dozen having been thus far reported. They are found on the face, abdomen and other regions of the body. They are referable to disturbances of the sympathetic nervous system, and are sometimes multiple and sometimes solitary. They are composed of ganglion cells, nerve fibers, and connective tissue fibrils. The histologic structure, as Borst states, resembles a broken-down sympathetic ganglion.

Zentralblatt für innere Medizin, Leipzig

Jan. 6, 1923, **44**, No. 1

Determination of Real Blood Pressure. H. Chantraine.—p. 1.

Casopis Lekaruv Ceskych, Prague

Jan. 6, 1923, **62**, No. 1

Tubercle of the Optic Disc and Choroid. J. Janku.—p. 1. Cont'd.
A Pelvimeter for the Conjugata Vera. V. Rubeska.—p. 8.
Present Status of Acidosis. V. Laufberger.—p. 9.

Hospitalstidende, Copenhagen

Jan. 10, 1923, **66**, No. 2

*Partial Heart Block. O. V. C. E. Petersen.—p. 21.

Partial Bundle Heart Block.—Petersen remarks that electrocardiography is the most reliable criterion for hypertrophy of either ventricle. Systematic electrocardiograms from heart patients have confirmed that partial bundle block is an early phase of complete heart block, and a sign of an extensive affection of the myocardium. He tabulates the details of 28 cases of partial bundle branch block encountered in the course of five and a half years in 25 men and 3 women. Nine kept in comparatively good stationary condition; in 6 the course seemed to be gradually progressive, and 12 have died. Only 2 of the 28 had edema. The most frequent symptom, except panting and palpitation which were present in all, was angina pectoris. Eighteen of the patients had angina pectoris, with frequently repeated attacks.

Hygiea, Stockholm

Jan. 16, 1923, **85**, No. 1

*Disinfecting Action of Quinin. K. G. Dernby.—p. 1.
*Neurology of the Abdominal Wall. G. Söderbergh.—p. 5.

Disinfecting Action of Quinin Derivatives.—Dernby's research seems to suggest that the solubility of quinin derivatives diminishes as p_H increases; also that addition of sodium bicarbonate or other alkali enhances the bactericidal power. Lack of alkaline reaction may be the explanation for the difference between the disinfecting power of certain quinin derivatives in the test tube and in human tissues.

Neurology of the Abdominal Walls.—For ten years Söderbergh has been studying the motor functions and reflexes in the abdominal walls. This is his fifteenth publication on the subject, and he reviews the conclusions and shows their practical application in five cases.

Ugeskrift for Læger, Copenhagen

Jan. 25, 1923, **85**, No. 4

Recent Progress in Dietetics. C. Jürgensen.—p. 59. Begun in No. 3, p. 37.
The New Danish Law on Marriage.—p. 63.
Contract Practice in Norway. H. Rasmussen.—p. 66.